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**MIL-HDBK-516A**  
**5 February 2004**  
**SUPERSEDING**  
**MIL-HDBK-516**  
**1 October 2002**

# DEPARTMENT OF DEFENSE HANDBOOK

## AIRWORTHINESS CERTIFICATION CRITERIA



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Report Documentation Page				Form Approved OMB No. 0704-0188	
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1. REPORT DATE <b>01 OCT 2002</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2002 to 00-00-2002</b>	
4. TITLE AND SUBTITLE <b>Department Of Defense Handbook: Airworthiness Certification Criteria</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>ASC/ENOS,2530 Loop Road West,Wright-Patterson AFB,OH,45433</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>193</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

## FOREWORD

1. This handbook is approved for use by all departments and agencies of the Department of Defense.
2. The criteria contained herein are qualitative in nature, and more specific guidance and background for specific criteria may be found in the appropriate Joint Service Specification Guides (JSSGs) and Federal Aviation Regulations referenced in Appendix A herein. Also, note that each section contains a list of typical certification source data that may be referenced for evaluating system compliance with that section's criteria. Terms such as "acceptable" used in the criteria are parameters whose specific definition must be determined by the implementing office in the context of each unique air system.
3. Note that in electronic versions, the blue highlighted paragraph headings or text in handbook sections 4 through 19 are internal hyperlinks to bookmarks in the appendix Cross-Reference Table. Clicking the mouse cursor on the blue jumps you to the referenced location in the table. To return from the Cross-Reference table to your jump point in the handbook, use the back arrow  key on the menu bar (enable View-Toolbars-Web to get the back arrow tool). Gray shaded internal cross-references within the document perform similarly.
4. Comments, suggestions, or questions on this document should be addressed to (ASC/ENOS, 2530 Loop Road West, Wright-Patterson AFB OH 45433-7101) or emailed to (Engineering.Standards@wpafb.af.mil). Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <http://www.dodssp.daps.mil>.

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# AIRWORTHINESS CERTIFICATION CRITERIA

This document is approved for use by all Departments and Agencies  
of the Department of Defense.

## 1. SCOPE

### 1.1 Scope.

This document establishes the airworthiness certification criteria to be used in the determination of airworthiness of all manned and unmanned, fixed and rotary wing air vehicles. It is a foundational document to be used by the single manager, chief engineer, and contractors to define their airworthiness certification basis.

This handbook is for guidance only. This handbook cannot be cited as a requirement. If it is, the contractor does not have to comply.

### 1.2 Applicability.

These criteria should be tailored and applied at any point throughout the life of the air vehicle when an airworthiness determination is necessary, especially whenever there is a change to the functional or product baseline.

This document establishes the minimum set of airworthiness certification criteria to be used in the airworthiness determination of all manned and unmanned fixed and rotary wing air vehicles. All of the criteria, however, do not apply to every type of air vehicle; also, platform-unique criteria may need to be added to fully address safety aspects of unique configurations. Therefore, tailor this document to identify a complete (necessary and sufficient) set of criteria, creating the certification basis against which to judge airworthiness of specific air vehicles. Tailoring rules are as follows:

- a. Identify any nonapplicable criteria, considering system or product complexity, type, data availability, and intended use. Document the rationale for identifying these criteria as nonapplicable.
- b. Criteria determined to be applicable to the air system may not be deleted or modified in any manner.
- c. If a portion of an otherwise applicable criterion is determined to be nonapplicable, identify the applicable and nonapplicable portions, and document the rationale.
- d. Supplement applicable criteria with specific measurable parameters, where appropriate (i.e., they add value to the definition of airworthiness requirements).
- e. Develop additional criteria, as appropriate, for any air system possessing capabilities not fully addressed by the criteria contained in this handbook.
- f. The certification basis should be fully documented and maintained under configuration control.



Rotary wing, unmanned aerial vehicle (UAV), and shipboard-unique requirements are addressed throughout the criteria.

Rotary wing air vehicle and UAV features demand unique safety-of-flight (SOF) system requirements. Therefore, unique criteria are included for these types of systems to ensure that minimum levels of design for safe operation and maintenance are established. The UAV operating system can be built into the vehicle or be part of the control station for remotely piloted vehicles. The UAV system comprises the control station, data links, flight control system, communications systems/links, etc., as well as the air vehicle. UAVs vary greatly in size, weight, and complexity. Because they are unmanned, SOF risks associated with loss of aircrew may not apply. However, as with manned air vehicles, SOF risk associated with personnel, damage to equipment, property, and/or environment must be considered. As such, the airworthiness criteria may be tailored for this unique application, including when a UAV is designed to be “expendable” or where the UAV will conduct missions with “minimum life expectancy.” Consideration should be given to the environment in which the UAV will be operated (controlled test range, national airspace, fleet usage, including ship based applications), to the airframe life for which the air vehicle is designed, and to the “expendability” of the UAV in close proximity to the control system, personnel, property, or other equipment.

Similarly, air vehicles intended for use aboard ship have unique requirements in areas such as structural integrity, propulsion system dynamic response and tolerance to steam ingestion, control systems response to approach and landings in high turbulence conditions, electromagnetic environmental effects, deck handling, support and servicing, and pilot field of view.

### **1.3 Cross reference table.**

The criteria included in this document are written such that an experienced engineer, trained in the specific technical area under consideration, can interpret, tailor, apply, and evaluate a particular system’s compliance with the criteria. To assist in this effort, a cross-reference table is provided as an appendix to this document. It provides military and civil (e.g., Federal Aviation Administration (FAA)) References to support documentation that may be used to help interpret and satisfy the airworthiness criteria. For additional assistance in interpreting or applying the criteria, call the appropriate section technical point of contact, provided at appendix A.20.

## 2. APPLICABLE DOCUMENTS

### 2.1 General.

The documents listed below are not necessarily all of the documents referenced herein but are those needed to understand the information provided by this handbook. Refer to the current version of these documents, unless otherwise indicated.

#### 2.1.1 Government specifications, standards, and handbooks.

The following specifications, standards, and handbooks form a part of this document to the extent specified herein.

### SPECIFICATIONS

#### DEPARTMENT OF DEFENSE

Joint Service Specification Guides (JSSG):

JSSG-2000 Air System

JSSG-2001 Air Vehicle

JSSG-2005 Avionic Subsystem, Main Body

JSSG-2006 Aircraft Structures

JSSG-2007 Engines, Aircraft, Turbine

JSSG-2008 Vehicle Control and Management System (VCMS)

JSSG-2009 Air Vehicle Subsystems

JSSG-2010 Crew Systems

Click the link below to go to the unlimited distribution JSSGs

(<http://engineering.wpafb.af.mil/corpusa/specification/jssg>)

### STANDARDS

#### DEPARTMENT OF DEFENSE

MIL-STD-464 Electromagnetic Environmental Effects Requirements for Systems

MIL-STD-882 System Safety Program Requirements

MIL-STD-1760 Aircraft/Store Electrical Interconnection System

### HANDBOOKS

#### DEPARTMENT OF DEFENSE

MIL-HDBK-244 Guide to Aircraft/Stores Compatibility

MIL-HDBK-1530 Aircraft Structural Integrity Program

MIL-HDBK-1763 Aircraft/Stores Compatibility: Systems Engineering Data Requirements and Test Procedures

(Copies of these documents are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094 or <http://www.dodssp.daps.mil> or <http://astimage.daps.dla.mil/quicksearch/>. Copies of documents indicating a distribution limitation (for example, statement D) may be ordered from ASC/ENOI, 2530 Loop Rd West, Bldg. 560, Wright-Patterson AFB, OH 45433-7101 or online at <https://www.en.wpafb.af.mil/engstds/engstds.asp>).

## 2.1.2 Other Government publications.

The following other Government publications form a part of this document to the extent specified herein.

### AIR FORCE POLICY DIRECTIVES AND INSTRUCTIONS

AFPD 62-4	Standards of Airworthiness for Passenger Carrying Commercial Derivative Transport Aircraft
AFPD 62-5	Standards of Airworthiness for Commercial Derivative Hybrid Aircraft
AFPD 62-6	USAF Aircraft Airworthiness Certification
AFI 11-202	General Flight Rules (Volume 3)

(Copies of Air Force Policy Directives can be viewed digitally at the AFDPO web site at <http://afpubs.hq.af.mil>.)

### AIR FORCE TECHNICAL ORDER

T.O. 00-5-1	AF Technical Order System
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(Copies of Air Force technical orders may be obtained via [https://wpafbres34.wpafb.af.mil/aftox/AFTOX\\_DOCUMENTS/index.cfm](https://wpafbres34.wpafb.af.mil/aftox/AFTOX_DOCUMENTS/index.cfm).)

### ARMY AERONAUTICAL DESIGN STANDARDS

ADS-51-HDBK	Rotorcraft and Aircraft Qualification (RAQ) Handbook ( <a href="http://www.redstone.army.mil/aed/eng/raqh/raqh.html">http://www.redstone.army.mil/aed/eng/raqh/raqh.html</a> )
ADS-33E-PRF	Aeronautical Design Standard Performance Specification Handling Qualities Requirements for Military Rotorcraft
AMCP 706-203	Engineering Design Handbook for Army Aircraft

(Copies of Army Aeronautical Design Standards may be obtained via <http://www.redstone.army.mil/amrdec/sepd/tdmd/StandardAero.htm>.)

### NAVY AERONAUTICAL REQUIREMENTS

AR-56	Structural Design Requirements (Helicopters)
AR-89	Structural Ground Test Requirements (Helicopters)

(Copies of Navy Aeronautical Requirements documents may be obtained via U.S. Mail from the following address: Structures Division, ATTN: Bldg. 2187, Suite 2340A, NAVAIRSYSCOM, 48110 Shaw Road, Unit 5, Patuxent River, MD 20670-1906. For inquiries, phone (301) 342-9381.)

NAVAL AIR SYSTEMS COMMAND INSTRUCTIONS

NAVAIRINST 13034.1B Flight Clearance Policy for for Manned Air Vehicles

NAVAIRINST 13034.2 Flight Clearances for Unmanned Aviation Systems

(Copies of NAVAIR Flight Clearance instructions may be obtained via  
<http://airworthiness.navair.navy.mil/>.)

CODE OF FEDERAL REGULATIONS

TITLE 14 Aeronautics and Space

(Copies of Federal Aviation Administration Regulations may be viewed at <http://www.faa.gov>, or may be obtained from the Federal Aviation Administration, 800 Independence Ave., SW, Washington, DC 20591.)

**2.1.3 Non-Government publications.**

The following non-Government publications form a part of this document to the extent specified herein.

American National Standards Institute

ANSI Z136.1 American National Standard for Safe Use of Lasers

(Application for copies should be addressed to the American National Standards Institute, 11 West 42nd Street, New York NY 10036; order online at <http://www.ansi.org>.)

Electronic Industries Association

EIA 649 National Consensus Standard for Configuration Management

(Application for copies should be addressed to the Engineering Industries Alliance (EIA), Technology Strategy and Standards Department, 2500 Wilson Boulevard, Arlington, VA 22201; order online at <http://www.eia.org/technology>.)

**2.2 Order of precedence.**

In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. DEFINITIONS & ABBREVIATIONS

#### 3.1 Definitions

All definitions, unless otherwise referenced, are to be considered within the context of this document.

- 3.1.1 Air system - An air vehicle plus the training and support systems for the air vehicle, and any weapons to be employed on the air vehicle. (JSSG 2000).
- 3.1.2 Air vehicle - An air vehicle includes the installed equipment (hardware and software) for airframe, propulsion, air vehicle applications software, air vehicle system software, communications/identification, navigation/guidance, central computer, fire control, data display and controls, survivability, reconnaissance, automatic flight control, central integrated checkout, antisubmarine warfare, armament, weapons delivery, auxiliary equipment, and all other installed equipment. (JSSG 2001)
- 3.1.3 Airworthiness - The property of a particular air system configuration to safely attain, sustain, and terminate flight in accordance with the approved usage and limits.
- 3.1.4 Airworthiness certification - A repeatable process implemented to verify that an air vehicle can be safely maintained and operated within its described operational envelope.
- 3.1.5 Allocated baseline - The approved, performance-oriented documentation, for a configuration item (CI) to be developed, which describes the functional and interface characteristics that are allocated from those of the higher level CI and the verification required to demonstrate achievement of those specified characteristics. [Ref: MIL-HDBK-61A]
- 3.1.6 Baseline (configuration) - (1) An agreed-to description of the attributes of a product at a specified point in time, which serves as a basis for defining change. (2) An approved and released document or set of documents, each of a specific revision, the purpose of which is to provide a defined basis for managing change. (3) The currently approved and released configuration documentation. (4) A released set of files consisting of a software version and associated configuration documentation. [Ref: EIA 649]
- 3.1.7 Chief engineer - The individual responsible for all system technical activities, including engineering and configuration changes, in support of the single manager.
- 3.1.8 Configuration control - (1) A systematic process that ensures that changes to a baseline are properly identified, documented, etc. (2) The configuration management activity concerning: the systematic proposal, justification, evaluation, coordination, and disposition of proposed changes; and the implementation of all approved and released changes into (a) the applicable configurations of a product, (b) associated product information, and (c) supporting and interfacing products and their associated product information. [Ref: EIA 649]

## MIL-HDBK-516A

- 3.1.9** Configuration management - A management process for establishing and maintaining consistency of a product's performance, functional, and physical attributes with its requirements, design, and operational information throughout its life. [Ref: EIA649]
- 3.1.10** Configuration status accounting - The configuration management activity concerning capture and storage of, and access to, configuration information needed to manage products and product information effectively. [Ref: EIA649]
- 3.1.11** Failure modes, effects, and criticality analysis (FMECA) - A procedure for identifying potential failure modes in a system and classifying them according to their severity. A FMECA is usually carried out progressively in two parts. The first part identifies failure modes and their effects (also known as failure modes and effects analysis). The second part ranks the failure modes according to the combination of their severity and the probability of occurrence (criticality analysis).
- 3.1.12** Functional baseline - The approved configuration documentation describing a system's or top-level configuration item's performance (functional, interoperability, and interface characteristics) and the verification required to demonstrate the achievement of those specified characteristics. [Ref: MIL-HDBK-61A]
- 3.1.13** Hazard - (1) A condition that is prerequisite to a mishap. [Ref: MIL-STD-882C] (2) Any real or potential condition that can cause injury, illness, or death to personnel, or damage to or loss of property. [Ref: MIL-STD-882D]
- 3.1.14** Integrity - Refers to the essential characteristics of a system, subsystem, or equipment that allows specific performance, reliability, safety, and supportability to be achieved under specified operational and environmental conditions over a specific service life. [Ref: MIL-HDBK-87244]
- 3.1.15** Interface - The performance, functional, and physical attributes required to exist at a common boundary. [Ref: EIA649]
- 3.1.16** Lead engineer - The individual responsible for all end-item technical activities, including engineering and configuration changes, in support of the end-item single manager.
- 3.1.17** Mishap - An unplanned event or series of events resulting in death, injury, occupational illness, or damage to or loss of equipment or property, or damage to the environment. [Ref: MIL-STD-882D]
- 3.1.18** Passenger - Any person on board an air vehicle who is not mission trained regarding the passenger safety/emergency capabilities of that particular air vehicle and mission. For a specific flight, this includes any person who does not have active crewmember duties and is not essential for accomplishing mission tasks. NOTE: Mission training constitutes specialized air vehicle training beyond preflight safety briefings.
- 3.1.19** Performance - A quantitative or qualitative measure characterizing a physical or functional attribute relating to the execution of an operation or function. Performance attributes include quantity (how many or how much), quality (how well), coverage (how much area, how far), timeliness (how responsive, how frequent), and readiness

(availability, mission/operational readiness). Performance is an attribute for all systems, people, products, and processes including those for development, production, verification, deployment, operations, support, training, and disposal. Thus, supportability parameters, manufacturing process variability, reliability, and so forth are all performance measures.

- 3.1.20** Product baseline - The approved technical documentation which describes the configuration of a CI during the production, fielding/deployment and operational support phases of its life cycle. The product baseline prescribes all necessary physical or form, fit, and function characteristics of a CI, the selected functional characteristics designated for production acceptance testing, and the production acceptance test requirements (MIL-HDBK-61A). When used for reprourement of a CI, the product baseline documentation also includes the allocated configuration documentation to ensure that performance requirements are not compromised.
  
- 3.1.21** Safety-of-flight (SOF) - The property of a particular air system configuration to safely attain, sustain, and terminate flight within prescribed and accepted limits for injury/death to personnel and damage to equipment, property, and/or environment. The intent of safety-of-flight clearance is to show that appropriate risk management has been completed and the level of risk (hazards to system, personnel, property, equipment, and environment) has been appropriately identified and accepted by the managing activity prior to flight of the air system.
  
- 3.1.22** SOF items or equipment - Items or equipment that, if they failed, have the potential for precluding the continued safe flight of the air vehicle within prescribed and accepted limits for injury/death to personnel and damage to equipment, property, and/or environment.
  
- 3.1.23** Single manager - The single individual specifically designated to be responsible for the life cycle management of a system or end-item. The single manager is the program manager vested with full authority, responsibility, and resources to execute and support an approved program.
  
- 3.1.24** System - A specific grouping of end-items, subsystems, components, or elements designed and integrated to perform a military function.
  
- 3.1.25** System safety - The application of engineering and management principles, criteria, and techniques to achieve acceptable mishap risk, within the constraints of operational effectiveness and suitability, time, and cost, throughout all phases of the system life cycle. [Ref: MIL-STD-882D]
  
- 3.1.26** Unmanned aerial vehicle (UAV) - A remotely piloted, semi-autonomous, or autonomous air vehicle and its operating system. This does not include air vehicles designed for one-time use as a weapon (e.g., cruise missile). The operating system can be built into the vehicle or be part of the control station for remotely piloted vehicles. This "system" includes the control station, data links, flight control system, communications systems/links, etc., as well as the air vehicle. [Ref: NAVAIRINST 13034.2]

### 3.2 Abbreviations and acronyms.

AC	advisory circular
ADS	Aeronautical Design Standard
AFR	Air Force Regulation
APC	aircraft pilot coupling
APS	auxiliary power system
APU	auxiliary power unit
AR	Army Regulation
BIT	built-in-test
CAD	cartridge actuated devices
CDR	critical design review
CFD	computational fluid dynamics
CFR	Code of Federal Regulations
C.G.	center of gravity
CI	configuration item
CSA	configuration status accounting
CSCI	computer software configuration item
ECP	engineering change proposal
E <sup>3</sup>	electromagnetic environmental effects
EMI	electromagnetic interference
EMP	electromagnetic pulse
EMS	environmental management system
EPS	emergency power system
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FCA	functional configuration audit
FMECA	failure modes, effects, and criticality analysis
FMET	failure modes and effects testing
FOD	foreign object damage
FRACAS	failure report and corrective action system
g	acceleration or load factor in units of acceleration of gravity
HCF	high cycle fatigue
HERF	hazards of electromagnetic radiation to fuel
HERO	hazards of electromagnetic radiation to ordnance
HERP	hazards of electromagnetic radiation on personnel
HUD	heads up display
ICD	interface control document
I/O	input/output
JFS	jet fuel starter
JSSG	Joint Service Specification Guide
LCF	low cycle fatigue



## MIL-HDBK-516A

LEP	laser eye protection
MSL	mean sea level
NBC	nuclear, biological, and chemical
NDI	nondestructive inspection
NVIS	night vision imaging system
OFP	operational flight program
PAD	pyrotechnic actuated devices
PCA	physical configuration audit
PDR	preliminary design review
PIO	pilot-induced oscillations
PLA	power lever angle
PLOC	probability loss of control
POD	probability of detection
PTO	power take-off
PVI	pilot vehicle interface
RAT	ram air turbine
RF	radio frequency
RTO	refused takeoff
SDIMP	software development integrity master plan
SDP	software development plan
SFAR	Special Federal Aviation Regulation
SOF	safety-of-flight
SRS	software requirements specification
SSHA	subsystem hazard analysis
STLDD	software top-level design document
TEMP	test and evaluation master plan
T.O.	technical order
UAV	unmanned aerial vehicle
VCF	vehicle control functions

#### 4. SYSTEMS ENGINEERING

The following criteria apply to all air vehicles and represent the minimum requirements necessary to establish, verify, and maintain an airworthy design.

##### TYPICAL CERTIFICATION SOURCE DATA

1. Reliability, quality, and manufacturing program plans
2. Contractor policies and procedures
3. Durability and damage tolerance control plans
4. Work instructions
5. Process specifications
6. Production/assembly progress reports
7. Quality records
8. Defect/failure data
9. Failure modes, effects, and criticality analysis (FMECA) documentation
10. Tech data package
11. As-built list to include part numbers/serial numbers for all critical components
12. List of deviations/waivers and unincorporated design changes
13. List of approved class I engineering change proposals (ECPs)
14. Proposed DD Form 250, Material Inspection and Receiving Report
15. Configuration management plans/process description documents
16. Test reports
17. Test plans
18. FAA Airworthiness Directives and Advisory Circulars
19. Manufacturer-issued service bulletins
20. Civil aviation authority certification plan
21. Civil aviation authority certification basis
22. Civil aviation authority certification report
23. System Safety Analysis Report

##### CERTIFICATION CRITERIA

#### 4.1 Design criteria.

- 4.1.1 Verify that the design criteria, including requirements and rules, adequately address safety for mission usage, full permissible flight envelope, duty cycle, interfaces, induced and natural environment, inspection capability, and maintenance philosophy.
- 4.1.2 Verify that the design criteria address all components.
- 4.1.3 Verify that, for commercial derivative air vehicles, the air vehicle's certification basis addresses all design criteria appropriate for the planned military usage.
- 4.1.4 Verify that failure conditions have been adequately addressed in the design criteria.

#### 4.2 Tools and databases.

- 4.2.1 Verify that all tools, methods, and databases used in the requirements definition/allocation, design, risk control and assessments of safety have been adequately validated and/or certified.

#### 4.3 Materials selection.

- 4.3.1 Verify that material specification properties are represented as guaranteed minimum values achievable using standardized processes.
- 4.3.2 Verify that material design allowable properties are represented as statistical values that account for production representative processing, manufacturing variability, effects of defects, final assembly interfaces, environmental exposure, and repair.
- 4.3.3 Verify that adequate corrosion prevention and control practices are in place for pitting, galvanic, crevice, filiform, exfoliation, and stress corrosion cracking.
- 4.3.4 Verify that material property degradation due to thermal exposure, electromagnetic radiation, and erosion has been accounted for.
- 4.3.5 Verify that materials and their governing processes are developed, standardized and controlled.
- 4.3.6 Verify that critical material and process integrity has been substantiated.

#### 4.4 Manufacturing, support, and quality.

- 4.4.1 Verify that critical elements (key product characteristics) have been identified.
- 4.4.2 Verify that all critical process capabilities exist to meet key product characteristic requirements.
- 4.4.3 Verify that all critical quality standards exist to meet key product characteristic requirements.
- 4.4.4 Verify the safety of the as-built design and that production allowances and tolerances are within acceptable limits and assure conformance to design.
- 4.4.5 Verify that nondestructive inspection (NDI) accept/reject criteria have been validated.

#### 4.5 Operator's and maintenance manuals (technical orders).

- 4.5.1 Verify that processes are in place to identify and document all restrictions, warnings, and cautions.
- 4.5.2 Verify that the technical data reflect the defined functional and product baseline.

- 4.5.3** Verify that procedures are in place for establishing and maintaining flight vehicle integrity.

- 4.6** **Configuration identification.**

- 4.6.1** Verify that the functional baseline has been properly documented, established, and brought under configuration control.
  - 4.6.2** Verify that the product baseline has been properly documented, established, and brought under configuration control.

- 4.7** **Configuration status accounting.**

- 4.7.1** Verify that the configuration status accounting (CSA) information system has the capability to track the configuration of safety-critical items.

## 5. STRUCTURES

The air vehicle structure includes the fuselage, wing (fixed or rotating), empennage, structural elements of landing gear, the control system, control surfaces, drive system, rotor systems, radome, antennas, engine mounts, nacelles, pylons, thrust reversers (if not part of the engine), air inlets, aerial refueling mechanisms, structural operating mechanisms, structural provisions for equipment/payload/cargo/personnel, etc.

### TYPICAL CERTIFICATION SOURCE DATA

1. Design criteria
2. Loads analyses
3. Internal load and stress analyses
4. Materials, processes, corrosion prevention, nondestructive evaluation and repair data
5. Results from any design development tests conducted
6. Proof test results
7. Flutter, mechanical stability and aeroservoelastic analyses
8. Loads wind tunnel test data
9. Flutter wind tunnel test data
10. Ground vibration test results
11. Damage tolerance and durability analyses
12. Component/full-scale static and fatigue test results
13. Live fire test results and ballistic analysis
14. Bird strike test and analysis results
15. Arresting wire strike test and analysis results
16. User and maintainer manuals, or equivalent
17. Flight operating limits
18. Strength summary and operating restrictions
19. Damage tolerance and durability test results
20. Full-scale durability test results
21. Functional test results
22. Flight loads test results
23. Instrumentation and calibration test results
24. Control surface, tabs and damper test results
25. Thermoelastic test results
26. Limit-load rigidity test results
27. Flight flutter test results
28. Mass properties control and management plan (interface)
29. Weight and balance reports (interface)
30. Inertia report
31. Design trade studies and analyses
32. Fuel system test results
33. Results of actual weighing
34. -1 and -5 (Weight and Balance Handbook) manuals, or equivalent

- 35. Hazard analysis
- 36. Environmental criteria and test results
- 37. Vibration and acoustic test results
- 38. Aircraft tracking program
- 39. Landing gear and airframe drop test plans and results
- 40. Mechanical stability test plans and results
- 41. Whirl test plans and results
- 42. Tie-down test plans and results
- 43. Structural description report
- 44. Tipover and rollover stability analyses
- 45. External store interface and release data
- 46. Ground and/or air transport rigging procedures, interface loads, and associated inspection requirements
- 47. Failure modes, effects, and criticality analysis (FMECA) documentation
- 48. Ground and rotor blade clearance dimensional data

## CERTIFICATION CRITERIA

### 5.1 Loads.

- 5.1.1 Verify that the external loads reflect the latest design criteria, aerodynamics, flight control system, structural stiffness, actual weight data, and in-flight center of gravity (C.G.) controls; and loads from appropriate ground and shipboard operations, including maintenance activities, are included.
- 5.1.2 Verify that the frequency of occurrence of specific loadings expected is known.

### 5.2 Strength.

- 5.2.1 Verify that the air vehicle structure has zero or positive margins of safety for all configurations within allowable operating conditions (including probable failure and defined emergency conditions). The determination of margins of safety is based on the smaller of the design or procurement specification allowable.

### 5.3 Materials, processes, corrosion prevention, nondestructive evaluation, and repair.

- 5.3.1 Verify that the allowables for materials are minimums; were established considering statistical variability, the expected environments, fabrication processes, repair techniques, and quality assurance procedures; and have been validated. Materials repairs should have conditions and properties to satisfy design requirements.
- 5.3.2 Verify that the maximum size and severity limits for damage requiring repair do not exceed the repair capability.
- 5.3.3 Verify that the structure requirements have been substantiated for the proposed repairs.

#### 5.4 Damage tolerance and durability (fatigue).

- 5.4.1 Verify that the safety-of-flight (SOF) structure, including dynamic components, is designed with required safe life (durability) or damage tolerance characteristics for the required service life.
- 5.4.2 Verify that the air vehicle has sufficient durability to safely operate for the required service life.
- 5.4.3 Verify that the fatigue strength and/or damage tolerance characteristics of all dynamic components and interface structures are known, such as engine mounts and adjacent fuselage structure.

#### 5.5 Flight operating limits.

- 5.5.1 Verify that the flight limits are based on up-to-date design criteria, loads, flutter, aeroservoelastic instabilities, handling qualities, flight control system, actual mass properties, strength, stiffness, and structural data.
- 5.5.2 Verify that the flight limits and data in the flight manual provide all information required for safe operation within established structural limits.

#### 5.6 Functionality.

- 5.6.1 Verify that the flight control system (flaps, slats, rotors, swashplates; cyclic, collective, and directional controls; etc.), main and nose/tail landing gear and doors, as well as other airframe equipment, operate freely without binding or deflecting in a manner which would affect SOF throughout the entire acceptable range of manufacturing and repair tolerances.
- 5.6.2 Verify that all pressure compartments (including fuel tanks) have proof pressure margin.

#### 5.7 Structural dynamics.

- 5.7.1 Verify that the flutter, divergence, and any aeroelastic or aeroservoelastic instability speeds are above the limit speed of the air vehicle with acceptable margins.
- 5.7.2 Verify that the aeroservoelastic phase and gain margins are acceptable for both the normal and back-up systems up to the air vehicle limit speed.
- 5.7.3 Verify that the control surfaces and tabs have either sufficient static and dynamic mass balance or the control circuit stiffness is sufficient to prevent flutter or sustained, limited amplitude instabilities. Also verify that transonic buzz tendencies have been eliminated.
- 5.7.4 Verify that the air vehicle is free from aeroelastic, aeroservoelastic, and whirl instabilities and has satisfactory damping up to limit speeds for any critical flutter mode or for any significant dynamic response mode.

- 5.7.5 Verify that the external stores configurations have been cleared for aeroelastic and aeroservoelastic instabilities with acceptable margins above the air vehicle limit speed.
- 5.7.6 Verify that there is adequate landing gear shimmy damping.
- 5.7.7 Verify that the failure conditions of structural and flight control components, as they affect dynamic, aeroelastic, and aeroservoelastic instabilities are not SOF critical and have acceptable margins above the air vehicle limit speed.
- 5.7.8 Verify that the aeroacoustic and vibration environmental criteria and design of airframe and installed equipment are adequate to provide durability and SOF throughout the intended flight envelope, usage, and service life.
- 5.7.9 Verify that the air vehicle is free from mechanical instability at all specified rotor speeds.
- 5.7.10 Verify that any critical rotor speeds (e.g., speeds that excite resonant frequencies and cause detrimental blade stresses) are outside the rotor operating range or that identified limitations are adequately separated from airframe structural frequencies and that these limitations are detailed in the appropriate maintenance manuals (technical orders).
- 5.7.11 Verify that the rotor and serviced and unserviced landing gear combination(s) do not result in a ground resonance instability.

## 5.8 Mass properties interface.

- 5.8.1 Verify that the mass properties reflect the current configuration of the air vehicle.
- 5.8.2 Verify that the mass properties fully support safe vehicle operations for all defined mission requirements, variation in useful load, basing/deployment concepts, interfaces, and necessary maintenance.
- 5.8.3 Verify that adequate center of gravity margins exist to handle aerodynamic, center of gravity, and inertia changes resulting from fuel usage, store expenditure, asymmetric fuel and store loading, fuel migration at high angle of attack and roll rates, and aerial refueling.
- 5.8.4 Verify that the provisions for determining the vehicle weight and longitudinal, lateral, and vertical center of gravity of the vehicle have been provided.
- 5.8.5 Verify that a fuel calibration methodology to determine the weight and center of gravity of the fuel has been defined.
- 5.8.6 Verify that all weight and center-of-gravity information (for both basic weight and loading data) for the flight manual is complete and up-to-date.



- 5.8.7 Verify that flight and maintenance manuals are consistent and contain all required checklists and loading data necessary to conduct required weight and balance checks while complying with specific weight and balance requirements.

#### 5.9 Stores/armament interface.

- 5.9.1 Verify that the store station loadings meet structural, flutter, mechanical stability, handling quality, and runway/shipboard deck clearance requirements and restrictions.
- 5.9.2 Verify that proper store/armament expenditure sequences, including emergency jettison, have been established to meet required longitudinal and lateral center of gravity limitations, with proper consideration of aerodynamic effects and air vehicle structural and flight control system capabilities.
- 5.9.3 Verify that the store certification was based on anticipated configurations, weight and center of gravity, and stores separation characteristics.

#### 5.10 Structural maintenance manuals (T.O.'s).

- 5.10.1 Verify that the structural maintenance manuals (T.O.'s) have been validated.

#### 5.11 Rotary wing air vehicles.

- 5.11.1 Verify when rotors are installed on a rotary wing air vehicle that there is sufficient clearance between blades, between the blades and the ground, and between the blades and other parts of the air vehicle.
- 5.11.2 Verify that sufficient blade clearance (as described above) is maintained during operation considering change in blade length, flexibility of the blades, and articulation.

## 6. FLIGHT TECHNOLOGY

Flight technology comprises the flight mechanic's functional areas consisting of stability & control, flying qualities, vehicle management functions, flight control functions, external aerodynamics, internal aerodynamics and performance. The air vehicle aero and stability configuration, engine/inlet/nozzle compatibility, performance and integrated control airworthiness of an air vehicle should be assessed using the criteria provided in the text below (not all items apply in each case; similarly, items may have to be added for vehicles employing new or innovative technology/techniques).

### TYPICAL CERTIFICATION SOURCE DATA

1. Design criteria
2. Design studies and analyses
3. Design, installation, and operational characteristics
4. Simulation tests, modeling, and results (including simulation verification, validation and accreditation data)
5. Design approval and function/system compatibility tests
6. Component, and functional level qualification and certification tests
7. Electromagnetic environmental effects
8. Installed propulsion compatibility tests
9. Acceptance criteria for test results
10. Failure modes, effects, and criticality analysis/testing (FMECA/FMET)
11. Hazard analysis and classification
12. Safety certification program
13. Computational, theoretical, and/or semi-empirical prediction methods
14. Configuration: aerodynamic design and component location
15. Wind tunnel test results and correction methods
16. Mathematical representation of system dynamics
17. Ground resonance and loop stability tests
18. Aeroservoelastic design criteria and analysis
19. Performance analysis
20. Flight manual
21. Natural environmental sensitivities
22. Flight path guidance analysis and simulation to include ship launch and recovery routines if applicable (including sensor or processor failure modes and effects on flight control)
23. Interface/integration control documents
24. Function, subfunction, and component specifications
25. Selection criteria and patterns selected for screens constructed to demonstrate inlet/engine compatibility
26. Flight test plan
27. Detailed flight profiles
28. Aircraft/engine operating limitations
29. Software development plan

30. Software development and product specifications
31. Software test plans, test procedures, and test reports
32. Software configuration control/management plan and procedure
33. Control laws
34. Flight test reports
35. Aerodynamic and air data uncertainty sensitivity studies
36. Thrust-drag bookkeeping system
37. Mass properties: weights, C.G.'s, and inertias

## CERTIFICATION CRITERIA

### 6.1 Stability and control.

Air vehicle static and dynamic characteristics and control capabilities are highly dependent on vehicle configuration and installed equipment.

#### 6.1.1 Control power. Verify control power:

- a. At minimum controllable speeds
- b. For rotation on takeoff
- c. To handle control surface mis-trim on takeoff
- d. To prevent or stop over-rotation in takeoff
- e. To provide safe control for go-around with engine(s) failure (critical engine(s) inoperative)
- f. To provide safe maneuver margins during trimmed flight on approach
- g. For sufficient trim capability
- h. To provide safe control margins in the event of abnormal or asymmetric fuel function operation
- i. To safely handle transient effects
- j. To safely handle problems arising from asymmetric or symmetric failures of trim controls and any adverse control surface positioning or special use surface(s)/devices
- k. To safely handle unwanted deployment or activation of thrust reverser or vectored thrust equipment whenever the possibility is not extremely improbable
- l. Sufficient for unique vehicle performance
- m. To safely handle engine failures during take-off ground roll

#### 6.1.2 Stability characteristics and transients.

- 6.1.2.1 Verify that safe static and dynamic stability exists with augmentation or active control functions operating. If sufficient redundancy is not provided in the air vehicle flight control functions to provide fail-safe operation, verify that the basic airframe (unaugmented) possesses the required stability characteristics and safety margins.
- 6.1.2.2 Verify that augmentation function(s), active control function(s), and related flight modes engagements and disengagements do not result in unsafe transients.

- 6.1.2.3 For autonomous vehicle control, verify that the net stability, with the guidance and control system operating, is safe for the intended mission under normal operating conditions.
- 6.1.3 [Flying, handling, and ride qualities.](#)
  - 6.1.3.1 Verify safe flying quality characteristics in turbulence (including ship's airwake/burble).
  - 6.1.3.2 Verify that the control law concepts employed are compatible with mission and safety requirements.
  - 6.1.3.3 Verify that the design exhibits safe vehicle flying characteristics for
    - a. "Classical" safe second-order response in pitch
    - b. First-order, well-behaved response in roll without roll ratcheting or other roll sensitivities
    - c. Equivalent system time delay
  - 6.1.3.4 Verify that aeroelastic, nonlinear, discontinuous, and unsteady aerodynamic effects demonstrate a safe vehicle.
  - 6.1.3.5 Verify that aircraft pilot coupling (APC) and pilot-induced oscillations (PIO) tendencies and flight characteristics are safe.
    - 6.1.3.5.1 Verify safe phase and gain margins.
    - 6.1.3.5.2 Verify, under high gain conditions, that the design does not exhibit unsafe limit cycle oscillations, unbounded oscillations, unsafe triggering mechanisms during mode transitions, or unsafe sudden/steep gain changes.
  - 6.1.3.6 Verify general ground handling characteristics to be safe for
    - a. Positive steering control
    - b. Steering sensitivities
    - c. Steering fade in/out
    - d. Failure conditions
    - e. Ground control paths
  - 6.1.3.7 [Verify safe](#) aerodynamic/flight characteristics for
    - a. High angle of attack
    - b. Pitch-up tendencies
    - c. Recovery from stall angles of attack
    - d. Post-stall maneuvering/control
    - e. Recovery from the loss of control from accelerated/nonaccelerated flight
    - f. Recovery from buffet effects

- g. Normal and abnormal effects of secondary/infrequently used control surfaces/devices
  - h. High slip angles
  - i. Large and unusual attitudes
  - j. Spin recovery
- 6.1.3.8 Verify hinge moment characteristics are adequate to satisfy safety requirements.
- 6.1.3.9 Verify safe stability and control dynamics under symmetrical and asymmetrical maneuvers, with and without stores, for
  - a. Control surface float angles
  - b. Control surface blow-back
  - c. Control surface nonlinearities
  - d. The vehicle control system or actuation functions to overcome actual moments
  - e. Establishing levels of flying qualities for the vehicle
  - f. Control surface hinge moment limiting
- 6.1.3.10 Verify that the stability and control effects of basic design features, as well as unique features, are safe in the entire flight envelope(s).
- 6.1.3.11 Verify all rate-limiting functions of the control function are safe to fly under flight scenarios employing all types of gain changes.
- 6.1.4** [Mission evaluations including flight path guidance.](#)
- 6.1.4.1 Verify that the air vehicle responds safely in all axes with commands coming from the flight path guidance devices and processors.
- 6.1.4.2 Verify flight path guidance systems safely compensate for degraded modes/failures of operation.
- 6.1.4.3 Verify all transitions to and from normal flight path guidance modes, whether augmented or manually selected, are safe.
- 6.1.5** [Other effects.](#)
- 6.1.5.1 Verify that no unsafe roll-yaw-pitch coupling(s) occur due to aerodynamic, kinematic, or inertial effects.
- 6.1.5.2 Verify that no unsafe roll-yaw-pitch coupling(s) occur due to engine coupling for symmetrical or asymmetrical thrust and gyroscopic effects.
- 6.1.5.3 Verify stall or loss of control warning function(s) and limiting and prevention functions to be safe for all required combinations of maneuver configurations, flight conditions, and loadings.

- 6.1.5.4 Verify wrong configuration warning functions are safe in all flight regimes. These include wing sweep, flap and landing gear position, and other variable geometry features.
- 6.1.5.5 Verify flying quality nonlinear effects to be safe when these effects or characteristics influence the vehicle characteristics including degradation and retention of critical pilot vehicle interface (PVI) and vehicle control functions due to failures.
- 6.1.5.6 Verify adequate actuator dynamics for a safe vehicle.
- 6.1.5.7 Verify sensor dynamic characteristics for a safe vehicle.
- 6.1.5.8 Verify adequate cockpit control dynamics for a safe vehicle.
- 6.1.5.9 Verify safe failure mode effects with operator-in-the-loop.
- 6.1.5.10 Verify control gradient forces are safe for entire range of applications.
- 6.1.5.11 Verify safe, non-impeded crew visual characteristics for all flight and ground conditions.
- 6.1.5.12 Verify proposed ship launch/recovery wind envelopes and ship pitch and roll limits are safe.
- 6.1.5.13 Verify the control tasks and workload levels associated with fight profiles are safe.
- 6.1.5.14 Verify handling qualities with backup power sources are safe.
- 6.1.6** [Envelopes.](#)
- 6.1.6.1 Verify that stability and response characteristics are safe for the anticipated critical flight conditions for the entire ground and flight envelopes.
- 6.1.6.2 Verify the air data function is safe.
- 6.1.6.3 Verify the flight-critical parameters list for completeness.
- 6.1.6.4 Verify the flight manual, and any supplements containing the air vehicle/engine operating limits, adequately describes the air vehicle's
  - a. Performance
  - b. Flight characteristics under normal and emergency conditions
  - c. Control functions under normal and emergency conditions
  - d. Other critical limits to ensure safe flight.

**6.1.7** [Store carriage and separation.](#)

- 6.1.7.1 Verify store carriage and separation response characteristics and limitations are safe.
- 6.1.7.2 Verify existing stores are safe for use in the intended envelope and environment.
- 6.1.7.3 Verify the safety and envelope of intentional and unintentional asymmetric stores combinations.

**6.2** [Vehicle control functions \(VCF\).](#)

VCF has many names and acronyms and varies from simple mechanics to highly complex integrated functions. Vehicle control can be accomplished through a variety of means (crew, autonomous, ground, etc.).

**6.2.1** [VCF architecture design.](#)

- 6.2.1.1 Verify the functional criteria to be safe.
- 6.2.1.2 Verify the VCF high-level architecture function to be safe for the supporting control function.
- 6.2.1.3 Verify that the integrated VCF architecture safely implements the proper levels of redundancy, fault tolerance, physical/functional separation of flight/safety-critical functions/components and other aspects.
- 6.2.1.4 Verify the autonomy of each function integrated in or by the VCF design to be safe.
- 6.2.1.5 Verify failure mode effects to be safe for the entire VCF operation.
- 6.2.1.6 Verify special failure states of single fail, dual fail, and special single fail/combination failure(s), as well as order of failure(s), are safe.

**6.2.2** [Basic VCF.](#)

- 6.2.2.1 Verify VCF which transmit crew control commands or generate and/or convey commands are safely implemented for the entire range of vehicle and crew responses.
- 6.2.2.2 Verify functional characteristics of friction levels, breakout forces, dead zones, hysteresis, and backlash are safe.
- 6.2.2.3 Verify longitudinal, lateral-directional, lift, drag, performance limiting, and variable geometry control functions are safely mechanized.
- 6.2.2.4 Verify the vehicle control system is safely able to obtain the maximum required control surface positions without mechanical interference.

- 6.2.2.5 Verify actuation for surface rate and hinge moments under normal conditions and capability under blowback conditions to be safe.
- 6.2.2.6 Verify cockpit control forces are safe for any control mechanization.
- 6.2.2.7 Verify functional control nonlinearities are safe.
- 6.2.2.8 Verify trim ranges and rates are safe.
- 6.2.2.9 Verify trim failure protection is safe.
- 6.2.2.10 [Verify control devices](#) in normal and failed states intended for intermittent operation are safe (e.g., flaps, speed brakes, geometry mechanisms, auxiliary control devices).
- 6.2.2.11 Verify safety protection functions/devices are safely implemented.
- 6.2.2.12 Verify alternate control paths available for each control axis or mode are safe.
- 6.2.2.13 Verify ratio changers and artificial feel devices with proper protection are safely implemented.
- 6.2.2.14 Verify no single, like dual, second, or single combination failure points in any VCF function result in an unacceptable probability of loss of function.
- 6.2.2.15 Verify the VCF components meet safety requirements.
- 6.2.2.16 Verify no unsafe mechanical interference or jamming situations exist in VCF mechanization.
- 6.2.2.17 Verify the clearances available safely tolerate foreign object damage (FOD).
- 6.2.2.18 Verify control laws are safe for the normal intended application.
- 6.2.2.19 Verify control laws transients for gain and mode changes prevent unsafe flight conditions.
- 6.2.2.20 [Verify control](#) laws do not induce any kind of unsafe oscillatory effects.
- 6.2.2.21 Verify control laws do not have unsafe PIO tendencies.
- 6.2.2.22 Verify control laws redundancy and failure management designs are safely implemented.
- 6.2.2.23 Verify control laws sensitivity margins and phase and gain margins for each feedback loop are safe (see 6.1).
- 6.2.2.24 Verify functional command control authority limits are safe.



- 6.2.2.25 Verify dynamic VCF functional performance is safe.
- 6.2.2.26 Verify the crew has the capability to safely override the design-limited vehicle control functions.
- 6.2.2.27 Verify nonoperative devices/programs can be safely locked out of any functions.
- 6.2.2.28 Verify engage/disengage functions/devices are safely assigned and identified for the crew.
- 6.2.2.29 Verify interlocks safely preclude incompatible modes, simultaneous engagement, and engagement with incompatible flight conditions or air vehicle configurations.
- 6.2.2.30 [Verify engage](#) and disengage transient times are safe.
- 6.2.2.31 Verify mode change transient times are safe.
- 6.2.2.32 Verify warning and caution functions safely operate and properly notify the crew.
- 6.2.2.33 Verify sensors are safely located to minimize/avoid structural mode coupling including vibration from configuration loading and gun fire, and to have safe sensitivity margins.
- 6.2.2.34 Verify sensitivities with variations in slope and bias conditions of air data functions have safe margins.
- 6.2.2.35 Verify the processor design of VCF is safe.
- 6.2.2.36 Verify preflight checklists of VCF are all-inclusive and safe.
- 6.2.2.37 Verify interfaces/integration with other functions and sub-functions are safe.
- 6.2.2.38 Verify the effects of loss of function(s) on safety.
- 6.2.2.39 Verify that any functional modes do not defeat any limiters designed for vehicle safety.
- 6.2.2.40 [Verify data](#) transfer and update rates are safe with adequate margins.
- 6.2.2.41 Verify air vehicle functional/transient interruption characteristics are safe.
- 6.2.2.42 Verify failure mode effects for critical maneuvers and critical flight regions are safe.
- 6.2.2.43 Verify flow rates for hinge moment, stiffness, and control surface rates are safe.
- 6.2.2.44 Verify the actuator design meets safety requirements for
  - a. Actuator redundancy techniques
  - b. Failure isolation design capability and limitations

- c. Hydraulic contamination effects
- d. Bottoming and snubbing
- 6.2.2.45 Verify the actuation system is safe (e.g., burst pressure, normal performance, high and low temperature, pressure impulses).
- 6.2.2.46 Verify motor/torque tube driven and similar control actuation mechanisms are safe (e.g., performance, implementation, redundancy management).
- 6.2.2.47 Verify command and control communications on the vehicle, other linked vehicles and ground control are integrated safely with an acceptable probability of failure.
- 6.2.2.48 Verify all command and control communications are secure against unwanted intrusions and security techniques used are implemented safely.
- 6.2.2.49 Verify no single space radiation upset event will cause loss of control and that the probability of encountering multiple upsets producing loss of control is acceptably low.
- 6.2.2.50 Verify propulsion control integration, control mechanisms, feedback loops, automatic throttle control systems, asymmetric thrust controlling conditions, special thrust control use conditions, atmospheric and hypersonic effects on thrust control are safe.
- 6.2.2.51 Verify VCF primary and integrated control function(s) security design is implemented safely.
- 6.2.2.52 Verify air data is safe for the following:
  - a. Implementation
  - b. Accuracy
  - c. Ground and air safety provisions
  - d. Anti-ice or ice prevention
  - e. Bird strike vulnerability
- 6.2.2.53 Verify that the environmental design and the equipment installation are safe.
- 6.2.2.54 Verify that vehicle control, payload, and ground system latencies and synchronizations are safe for mission accomplishment.
- 6.2.2.55 Verify that emergency procedures are appropriate and safe for the emergency that they address.
- 6.2.2.56 Verify, for rotary wing air vehicles, adequate transient response for single axis (collective or pedal) inputs.
- 6.2.2.57 Verify multi-axis inputs (e.g., collective, pedal, and cyclic) are safe during typical operational mission maneuvers.

**6.2.3** [VCF power source criteria.](#)

(Note: See section 12 for specific electrical power system criteria.)

- 6.2.3.1 Verify hydraulic distribution has no single failure points resulting in loss of more than one hydraulic function.
- 6.2.3.2 Verify hydraulic function dynamics to have no unsafe pressure pulsating or resonant conditions.
- 6.2.3.3 Verify backup and emergency hydraulic power function(s) have no unsafe effects from reduced flow rates or pressure or flutter margin.
- 6.2.3.4 Verify any VCF flight limitations with emergency/backup hydraulic power and switchover time constants are safe.
- 6.2.3.5 Verify VCF effects due to loss of each or part of each hydraulic function to be safe.  
(See 8.1 for specific criteria.)
- 6.2.3.6 Verify electrical power normal/backup/emergency capability following loss of engine(s) and generator(s) for VCF is safe.
- 6.2.3.7 Verify independent electrical power sources provide safe redundancy for VCF.
- 6.2.3.8 Verify electrical power transients, both normal and switchover, are safe.
- 6.2.3.9 Verify that, if batteries are employed for SOF backup power, adequate charging methods and checks are provided and installation provisions for all batteries are safe.
- 6.2.3.10 Verify electrical power bus separation for prevention of single failure points is safe.
- 6.2.3.11 Verify effects of normal, abnormal, and failure modes of the electrical power function are safe for VCF.
- 6.2.3.12 Verify direct, uninterruptible, quality electrical power implementation for VCF is safe.

**6.2.4** [Flight worthiness evaluations.](#)

- 6.2.4.1 Verify flight-critical components meet safety criteria.
- 6.2.4.2 Verify all single point failures are identified with the associated probability of failure(s) and that they demonstrate an acceptable flight safety risk.
- 6.2.4.3 Verify no safety impacts exist for the vehicle or crew due to transient effects of failures impacting controllability or structure.

- 6.2.4.4 Verify the ability of the VCF to safely recover the air vehicle under worst-case flight envelope and engine failure conditions and identify any flight limitations in the flight manual.
- 6.2.4.5 Verify undetected, latent, or unannounced failures do not result in unacceptable flying qualities.
- 6.2.4.6 Verify that no unsafe handling characteristics are exhibited in critical flight phases for aerodynamic and air data uncertainty sensitivity studies/analyses.
- 6.2.4.7 Verify vehicle control's and payload system's latency and synchronization responses are safe.

#### **6.2.5** [VCF software.](#)

(Note: For subsystems that use computer resources, see section 15 for additional, specific criteria.)

- 6.2.5.1 Verify the safe operation of each computer software configuration item (CSCI)/operational flight program (OFP) from unit to full flight program levels for all modes, inputs, failure detection, reconfiguration techniques, self-check operations, interfaces, and integration under all dynamic conditions.
- 6.2.5.2 Verify the flight software version demonstrates acceptable performance and safety.
- 6.2.5.3 Verify critical control modes in all flight conditions are safe.
- 6.2.5.4 Verify single-point or probable multiple failures that can paralyze redundant controlling functions are within the required safety probabilities.
- 6.2.5.5 Verify software compatibility with external, integrating software functions is safe.
- 6.2.5.6 Verify software interrupts, reinitialization, resynchronization, recheck, reconfiguration, restarts, resets and negation of environmental and generic error effects are safe.
- 6.2.5.7 Verify software design of self-check, failure monitoring, redundancy management, reconfiguration, voting, transient suppression, overflow protection, anti-aliasing, saturation, interlocks, memory protection, failure propagation, and other techniques prevent unsafe flight situations.
- 6.2.5.8 Verify built-in-test implementation operates failure free and safely identifies, isolates, and corrects malfunctions.
- 6.2.5.9 Verify security design of VCF software loading techniques is safe.

### 6.3 Aerodynamics and performance.

Air vehicle aerodynamic and performance characteristics are highly dependent on vehicle configuration. These are verified through analysis based on results of computational fluid dynamics (CFD), wind tunnel testing, flight simulation, and flight testing.

#### 6.3.1 Flight vehicle.

- 6.3.1.1 Verify that a safe fuel loading procedure exists to accomplish the flights intended.
- 6.3.1.2 Verify the ability to recover the air vehicle over the entire flight envelope in the presence of malfunctions.
- 6.3.1.3 Verify safe takeoff, landing, and critical field length performance for intended atmospheric conditions.
- 6.3.1.4 Verify safe engine(s) inoperative performance (if appropriate) to include optimum speeds for energy management and possible autorotation.
- 6.3.1.5 Verify that the flight manual data limits for takeoff, landing, hover, climb, maneuver, cruise, descent, emergency conditions to include height/velocity diagrams for rotary wing air vehicles, and any other critical factors are adequate to conduct safe flights.
- 6.3.1.6 Verify the safety of store carriage and separation characteristics for the prescribed stores.
- 6.3.1.7 Verify the ability to safely terminate flight over the entire flight envelope, in the presence of malfunctions.
- 6.3.1.8 Verify that flight manual or other predictions of power available, power required, fuel flow, ground effect, engine out and autorotation performance are of sufficient accuracy to assure safe conduct of flight operations throughout the range of possible gross weights and ambient conditions.

#### 6.3.2 Installed propulsion capability.

- 6.3.2.1 Verify airframe/inlet/engine compatibility evaluations are adequate for safe operation (see section 7).
- 6.3.2.2 Verify safe operation for
  - a. Engine steady and transient response characteristics of the engine and engine control system (also see 7.4.1.2 and 7.4.2.2)
  - b. Fuel flow modulation (also see 7.2.2)
  - c. Engine responses to input signals at different frequencies (also see 7.4.1)
  - d. Engine control and vehicle control system communication (also see 7.4.1 and 8.8.2)
  - e. Fuel, air induction, exhaust and bleed air extraction systems, ambient temperatures, ambient pressures, and vibratory environment (also see 7.4.1.1 and 8.8)

f. Sensitivity, stability, control response, and torque predictability for engine and vehicle control during engine power changes (acceleration and deceleration) (also see 7.2.1, 7.2.2, 7.4.1.2 and 7.4.2.2)

g. Auxiliary engine control functions (also see 7.4.2.1)

h. Altitude cold start and hot restart capability (also see 7.2.3).

6.3.2.3 Verify engine performance restrictions resulting from thermal boundaries (reflected in the proper databases and manuals) are safe.

6.3.2.4 Verify inlet buzz boundaries and flight limitations are well defined.

6.3.2.5 Verify that there are no severe performance impacts due to flow disturbance and blockage items. Also ensure that these items are safely implemented and located, especially ahead of or near the inlets.

6.3.2.6 Verify that engine performance for hot anti-icing air discharged into the inlet or inlet duct surface is safe (also see 7.1.2 and 7.4.7).

6.3.2.7 Verify safe engine performance for an inlet sand and dust separator (also see 7.1.3 and 8.8.9).

6.3.2.8 Verify that effects of armament gas (and debris) ingestion on engine performance (i.e., surge and resulting torque spikes) are safe (also see 7.2.4 and 7.3.9).

### **6.3.3** [Flight limits.](#)

6.3.3.1 Verify buffet boundaries and flight limitations are safe.

6.3.3.2 Verify stall angle of attack and velocity reflected in the flight manual are safe.

6.3.3.3 Verify maximum allowable angle of attack, angle of attack limiter, and set margins are safe.

6.3.3.4 Verify center of gravity and gross weight limitations are safe.

6.3.3.5 Verify safe flight limitations account for vortex ring state, settling with power, retreating blade stall, advancing blade compressibility, and critical azimuth factors.

## 7. PROPULSION

### TYPICAL CERTIFICATION SOURCE DATA

1. Design criteria
2. Design studies and analyses
3. Design, installation, and operational characteristics
4. Engine ground and simulated altitude tests
5. Engine design function/system compatibility tests
6. Engine component and functional level qualification and certification tests
7. Electromagnetic environmental effects
8. Installed propulsion compatibility tests
9. Acceptance test results
10. Failure modes, effects, and criticality analysis/testing (FMECA/FMET)
11. Hazard analysis and classification
12. Safety certification program
13. Engine endurance and accelerated mission testing
14. Engine and component structural and aeromechanical tests
15. Flight test plans and results
16. Engine structural integrity program (ENSIP) analyses and tests
17. Engine life management plans
18. Over-speed and over-temperature tests
19. Overall engine and component performance analyses
20. Flight manual
21. Natural environmental sensitivities
22. Inlet airflow distortion/engine stability assessments and audits
23. Interface/integration control documents
24. Function, subfunction, and component specifications
25. Selection criteria and inlet distortion patterns selected to demonstrate t/engine compatibility.
26. Engine control system rig tests
27. Engine health monitoring system design reports and tests
28. Aircraft/engine operating limitations
29. Engine software development plan and product specifications
30. Engine software test plans, test procedures and test reports
31. Engine software configuration control/management plan and procedure

### CERTIFICATION CRITERIA

#### 7.1 Performance.

- 7.1.1 Verify that performance is adequate for safe operation and is properly documented in the flight manual. This includes all installation effects imposed by the air vehicle.

- 7.1.2 Verify safe engine performance when hot anti-icing air is discharged into the inlet or inlet duct surface (also see 6.3.2.6).
- 7.1.3 Verify safe engine performance when an inlet sand and dust separator is included (also see 6.3.2.7)

## 7.2 Operability.

- 7.2.1 Verify that positive stability margin exists at all critical flight conditions or that placards are documented in the flight manual.
- 7.2.2 Verify the control system has adequate stability for small throttle transients, including approach and aerial refueling conditions. Large throttle transients may be expected during shipboard approaches, if applicable.
- 7.2.3 Verify that air-start requirements are met and documented in the flight manual. Air-starts should include spool-down, windmill, and starter-assisted as appropriate for the air vehicle system.
- 7.2.4 Verify that the engine will recover from instability induced by external influences (such as inlet distortion and steam and armament gas ingestion) after the external influence is removed, without employing measures such as commanded idle or shutdown and without exceeding thermal or structural limits.
- 7.2.5 Verify compatibility with shipboard jet blast deflectors.

## 7.3 Engine structures.

- 7.3.1 Verify that damage tolerance, blade containment, foreign object damage (FOD), durability, corrosion, and sand, ice, liquid water, and bird ingestion requirements have been met.
- 7.3.2 Verify that the allowables for materials are minimums; were established considering statistical variability, the expected environments, fabrication processes, repair techniques, and quality assurance procedures; and have been validated.
- 7.3.3 Verify that no flutter exists within the operational environment.
- 7.3.4 Verify that sufficient safety margin exists to operate the engine for the required inspection interval.
- 7.3.5 Verify that nondestructive inspection (NDI) processes are in place and meet probability of detection (POD) and inspection interval requirements.
  - 7.3.5.1 Verify that all NDI processes are validated and verified.
- 7.3.6 Verify that fracture-critical parts have been serialized, properly marked, and subjected to the required process control and NDI procedures.



- 7.3.7 Verify that positive margin exists for strength, low cycle fatigue (LCF), high cycle fatigue (HCF), creep, stress rupture, and other applicable critical failure modes.
- 7.3.8 Verify that all fracture-critical parts have been designed to be damage tolerant and that positive margins exist.
- 7.3.9 Verify that positive margins of safety exist for engine over-speed, over-temperature, over-torque, torque spikes and over-pressure conditions.
- 7.3.10 Verify that all inspection intervals and life-limited parts and components are identified in the technical manuals and a process to track life consumption is operational and current.

#### 7.4 Engine control and accessory systems.

- 7.4.1 Verify that the engine control system performs safely under all required conditions.
  - 7.4.1.1 Verify that the engine control system protects the engine from any out-of-limit conditions or instabilities such as over-speed, over-temperature, loss of commanded thrust, and surge/stall.
  - 7.4.1.2 Verify that adequate phase and gain margins exist for all control loops and throttle transient types, including small power lever angle (PLA) transients, to preclude instabilities.
- 7.4.2 Verify that any failure of the controls and accessories will result in a fail-operational and/or fail-safe condition.
  - 7.4.2.1 Verify safe operation of auxiliary engine control functions, such as engine limiting (contingency or emergency power), backup (or reversionary) engine control modes, control anticipation features, and cruise fuel flow optimization.
  - 7.4.2.2 Verify that the engine control system failures do not cause unexpected engine transients, unacceptable controllability, stability, handling qualities, or require any urgent or excessive pilot action.
- 7.4.3 Verify that all engine control and accessory system electrical components withstand system-level-required electromagnetic environmental effects (electromagnetic interference (EMI), electromagnetic pulse (EMP), etc.) and maintain safe engine operation.
- 7.4.4 Verify safe engine fuel system performance under severe operating conditions such as high vapor/liquid ratios, temperature ranges, contamination, and dry lift for specification, alternative, and emergency fuels.
- 7.4.5 Verify that any uncontained failure of an engine control and accessory system component with rotating parts will not adversely affect the continued safe operation of the air vehicle.

- 7.4.6** Verify that the engine ignition system(s) successfully lights the main combustor and augmentor when commanded by the control system or pilot within the engine/augmentor operating envelope.
- 7.4.7** Verify that the engine anti-ice/de-ice system prevents damaging ice buildup/removal at all engine speeds and will not result in heat-induced damage to the engine's front frame structure.
- 7.4.8** Verify that thermal management systems sufficiently reject heat.
- 7.4.9** Verify that all engine hydraulic, fuel, or oil components properly operate the variable geometry of the engine. Variable geometry includes airflow path vanes, exhaust nozzles, thrust reversers, and vectored thrust components.
- 7.4.10** Verify that the engine augmentor system provides the required levels of additional thrust for safety.

## **7.5 Engine monitoring system.**

- 7.5.1** Verify that all safety/mission-critical faults and warnings are supplied to the pilot/maintainers and provide a clear interpretation of any identified engine problems.
- 7.5.2** Verify that cockpit indications demonstrate safe operation, ranges, zones, and accuracy.

## **7.6 Engine bearing and lubrication system.**

- 7.6.1** Verify that safe bearing operation is maintained, including periods of abnormal operation such as oil flow interruption.
- 7.6.2** Verify that changes in bearing thrust balance do not result in the bearing operating in failure prone regions of operation.
- 7.6.3** Verify that the lubrication system functions properly during ground and flight operation, under all atmospheric conditions and for all flight conditions/attitudes in the air vehicle's operating envelope.
  - 7.6.3.1** Verify that the lubrication system provides an adequate supply of conditioned (filtered, deaerated and temperature maintained) oil under all operating conditions.
  - 7.6.3.2** Verify that the lubrication system health monitoring devices will provide adequate warnings in a timely manner to reduce occurrences of in-flight shutdowns and mission aborts.
  - 7.6.3.3** Verify that the lubrication system is free from excessive discharge at the breather.
- 7.6.4** Verify that the lubrication system and bearing compartments do not produce combustion.

## 7.7 Engine installations compatibility.

- 7.7.1 Verify that all engine-to-airframe mechanical, fluid, and electrical connections meet interface control document (ICD) physical and functional requirements, are free of detrimental interferences, and have been evaluated for safe operation (see 8.8).
- 7.7.2 Verify that the main mounts contain adequate design margin to properly secure the engine under all operating conditions and failure modes.
- 7.7.3 Verify, for rotary wing air vehicles, satisfactory interface has been achieved between the engine (including subsystems/accessories) and the airframe relative to both high-frequency engine-excited and low-frequency air vehicle rotor(s) excited vibrations.
- 7.7.4 Verify that effects of the high-energy, low-frequency vibrations generated by main rotor blade passage (fundamental and harmonic) frequencies on the engine and related engine components do not adversely affect the operation of the engine and the drive system.

## 7.8 Failure modes.

- 7.8.1 Verify that safety-critical propulsion system failures are identified, have failure probabilities validated, and have safe inspection intervals assigned.
- 7.8.2 Verify that, when required, multiple propulsion subsystems are physically, systemically, and operationally isolated from each other to prevent the failure of more than one propulsion subsystem due to any single or common cause.

## 7.9 Flight manual/procedures and limitations.

- 7.9.1 Verify that normal operating procedures, emergency procedures, restrictions, and limits for the air vehicle propulsion system are included in the flight manual and have been validated.

## 7.10 Engine externals.

- 7.10.1 Verify that all external tubing/manifolds, clamps, and electrical cabling are safely affixed and routed on the engine.
  - 7.10.1.1 Verify that all external tubing/manifolds, clamps and electrical cabling do not contain natural frequencies within the engine and accessories operating ranges.
  - 7.10.1.2 Verify that all external tubing/manifolds have adequate minimum clearances and clamping.
  - 7.10.1.3 Verify that fuel and oil lines are not mounted next to potential sources of ignition so as to cause a fire in the event of a leak.
  - 7.10.1.4 Verify that fuel, oil, and air lines are mounted a sufficient distance from potential sources of extreme temperatures to prevent overheating or overcooling.

7.10.1.5 Verify that all pressurized tubes/manifolds have design margin for their maximum operating conditions.

**7.10.2** Verify that engine gearboxes have design margin for their minimum/maximum operating conditions.

7.10.2.1 Verify that failure of any gearbox mounted component (oil pumps, fuel pumps, starters, generators, etc) will not result in failure of the gearbox itself.

7.10.2.2 Verify that failure of the engine power take-off (PTO) coupling assembly will not adversely affect safe operation of the air vehicle.

### **7.11 Engine computer resources.**

(Note: These criteria must be compatible with those found in section 15.)

7.11.1 Verify that utilization margins do not adversely impact safety.

7.11.2 Verify that air vehicle/engine software release packages do not adversely affect safety-critical engine control functions.

### **7.12 Propellers and associated subsystem components.**

7.12.1 Verify that adequate margins exist for the performance, strength and durability of the following: propeller and propeller system components, including the propeller drive shaft, reduction gear box, torque measurement system, negative torque system, propeller brake, and mechanical over-speed governor.

7.12.2 Verify that any critical propeller speeds (e.g., speeds that excite resonant frequencies and cause detrimental blade stresses) are outside the engine operating range or identified limitations are placed in the appropriate operators and maintenance manuals (T.O.'s).

7.12.3 Verify the safety of both the hardware and software components of propeller reversing systems and pitch controls.

7.12.4 Verify the safety of all physical and functional interfaces between the propeller and any system that drives the propeller.

### **7.13 Rotors and associated subsystem components.**

7.13.1 Verify that the rotary wing and all associated components and systems (drive shaft, reduction gear box, torque measurement system, negative torque system, brake system and mechanical overspeed governor) provide sufficient thrust, strength and durability for safe operation at sea level hover and margin for vertical climb and hover throughout the flight envelope.

7.13.2 Verify that the rotor system provides safe controllability of the air vehicle under all expected operating conditions.

## 8. AIR VEHICLE SUBSYSTEMS

### TYPICAL CERTIFICATION SOURCE DATA

1. Design criteria
2. Functional operations test results
3. Performance test results
4. Failure modes, effects, and criticality analyses (FMECA)
5. Hazard analysis
6. Component and system SOF certifications/qualifications
7. Design studies and analysis
8. Installation and operational characteristics
9. Flight manual and limitations
10. Electromagnetic environmental effects analysis and test results

### CERTIFICATION CRITERIA

(Note: For subsystems that use computer resources, see section 15 for additional, specific criteria.)

#### 8.1 Hydraulic and pneumatic systems.

- 8.1.1 If there is more than one hydraulic system (or pneumatic system), verify that safe operation can be continued if any one hydraulic (or pneumatic) system fails.
  - 8.1.1.1 Verify that any single-point failure locations have been identified and their consequences of failure are acceptable, eliminated, or mitigated.
- 8.1.2 Verify that interfaces and redundancies with the flight control, electrical, and avionics systems were evaluated and verified to be safe.
- 8.1.3 Verify normal, back-up, and emergency hydraulic (or pneumatic) system operation.
- 8.1.4 Verify that hydraulic fluid temperatures do not exceed the maximum allowable temperature.
- 8.1.5 Verify that adequate crew station information is available to notify the flight crew of the hydraulic and pneumatic systems' operating conditions.
- 8.1.6 Verify that flight and maintenance manuals include normal, back-up and emergency operating procedures, limitations, restrictions, servicing, and maintenance information.
- 8.1.7 Verify that the plumbing installation and component installations are safe for flight.
- 8.1.8 Verify that the air vehicle hydraulic and pneumatic systems' size/power meets demand.

- 8.1.9 Verify that undesirable pressure fluctuations are precluded from the system.
- 8.1.10 Verify that methods and procedures exist for controlling and purging impurities from the hydraulic and pneumatic systems and that these systems' level of contamination is acceptable.

## 8.2 Environmental management system (EMS).

- 8.2.1 Verify that the design incorporates system safety requirements of the air vehicle.
- 8.2.2 Verify that the integrated system functional and physical compatibility is safe.
- 8.2.3 Verify that the EMS meets safety requirements when operating under installed conditions over the design envelope.
- 8.2.4 Verify the availability of alternate means of cooling of safety-critical avionics and sufficient cockpit ventilation when the primary EMS is nonoperational.
- 8.2.5 Verify that pressurization emergency requirements, for manned air vehicles, are met in the cockpit and crew station locations.
- 8.2.6 Verify that the effects of loss of some or all EMS functions on air vehicle safety, on air vehicle performance, or on the safety and performance of other air vehicle systems are understood and acceptable.
- 8.2.7 Verify that normal and emergency procedures are included in the flight manual.
- 8.2.8 Verify that adequate controls and displays for the EMS are installed in the crew station/ground segment control station or other appropriate locations to allow the EMS to function as intended.
- 8.2.9 Verify that the EMS meets the requirements for personnel atmosphere and protective flight garment supply systems (oxygen equipment, pressure suits, and anti-g garments or ventilation garments).
- 8.2.10 Verify that subsystems used for environmental protection (e.g., windshield rain/snow/ice removal, anti-ice and defog) provide for safe operation of the air vehicle in the specified environment.
- 8.2.11 Verify that the crewmember's breathing air is protected from contamination in all forms, including oil leakage in the engine and nuclear-chemical-biological warfare conditions.
- 8.2.12 Verify that the bleed air or other compressed air duct system is monitored for leaks and structural integrity and that hot air leaking from damaged ducting will not cause ignition of any flammable fluids or other materials or cause damage to SOF items.
- 8.2.13 Verify that redundant bleed air shut-off provisions are available at, or as close as possible to, the bleed source.

- 8.2.14 Verify that pressurization rate control is available to preclude pressure surges in the cockpit.
- 8.2.15 Verify that nuclear, biological, and chemical (NBC) equipment and/or procedures are provided for protecting or maintaining EMS cooling air free from contaminants.
- 8.2.16 Verify that the air vehicle's thermal management system is stable for all flight conditions and environments.
- 8.2.17 Verify that all EMS components, either individually or as part of a subsystem, have passed all safety-related qualification tests (e.g., proof, burst, vibration, containment, over-speed, acceleration, explosive atmosphere, pressure cycling, and temperature cycling as required for airworthy performance).
- 8.2.18 Verify adequate smoke clearance is available to ensure safe operation with or without an operational EMS.
- 8.2.19 Verify that all surface touch temperatures remain within required limits.

### 8.3 Fuel system.

(Includes refuel, defuel, feed, transfer, pressurization, vent, quantity gauging, dump, and inerting; includes external and auxiliary fuel systems (tanks, plumbing, and pumps).)

- 8.3.1 Verify that the integrated system functional and physical compatibility meets SOF requirements.
- 8.3.2 Verify that the fuel system functions under all probable conditions with the approved fuels.
- 8.3.3 Verify that all fuel system critical failure modes and hazards have acceptable risk levels.
- 8.3.4 Verify the safe installation of the fuel system and components.
- 8.3.5 Verify that the plumbing and components in the fuel system (as completely assembled and installed within the air vehicle) can withstand exposure to the specified proof pressure limit for the subsystem without resulting in fuel leakage or system performance degradation.
- 8.3.6 Verify that the fuel feed system provides a continuous supply of fuel to the engine at sufficient pressure throughout the flight and ground operation envelopes, including starting and all flight maneuvers.
- 8.3.7 Verify that fuel transfer flow rates meet the operational ground and flight envelope requirements.
- 8.3.8 Verify that the air vehicle center-of-gravity limits are not exceeded during all fuel system and air vehicle functions, including release of stores, aerial refueling (if applicable), and fuel dumping operations.

- 8.3.9 Verify that the fuel system is designed to prevent pressures from exceeding the system's proof pressure limits (both minimum and maximum) during refueling, defueling, transfer, fuel feed, and fuel dump operations.
- 8.3.10 Verify that the flight and maintenance manuals include normal and emergency operating procedures, limitations, restrictions, servicing, and maintenance information.
- 8.3.11 [Verify](#) that procedures exist for controlling and purging impurities from the fuel system and that the fuel system's level of contamination is acceptable at all times.
- 8.3.12 Verify that the system has been designed to withstand the hazards associated with lightning, static electricity, fuel leaks, and the introduction of electrical power into fuel tanks.
  - 8.3.12.1 Verify that the fuel system has been designed and arranged to prevent the ignition of fuel vapor within the system.
  - 8.3.12.2 Verify that secondary fuel and vapor tight barriers have been provided between fuel tanks, fire hazard areas, and inhabited areas.
  - 8.3.12.3 Verify that drainage provisions have been provided to remove all normal and accidental fuel leakage to a safe location outside of the air vehicle.
  - 8.3.12.4 Verify that fuel jettison, fuel venting, fuel leaks, or fuel spills will not be ingested by the engine or flow into hazardous ignition areas or onto the environmental management system.
- 8.3.13 Verify that fuel tanks are capable of withstanding, without failure, the vibration, inertia, fluid and structural loads that they may be subject to in operation.
- 8.3.14 Verify that tank pressure will not exceed tank structural limits because of a single failure under normal operation.
- 8.3.15 Verify that the air vehicle can be safely refueled/defueled.
- 8.3.16 Verify that the fuel system has been designed to prevent fuel spills during refuel operations.
- 8.3.17 Verify that adequate controls and displays for the fuel system functions are provided for the appropriate crewmember(s) to indicate the necessary fuel system functions and warn of hazardous conditions.
- 8.3.18 Verify that built-in-test (BIT) and fault isolation provisions are available to ensure safe fuel system operations.
- 8.3.19 Verify that jettisoned fuel does not impinge on air vehicle surfaces or become re-ingested into the air vehicle.



**8.4 Fire and hazard protection.**

(Includes prevention, detection, and extinguishing and explosion suppression provisions.)

- 8.4.1** Verify that the integrated fire protection system functional and physical compatibility is safe.
- 8.4.2** Verify that each component of the air vehicle is properly zoned according to the fire and explosion hazards and that protection has been provided to counter the hazards such that no fire or explosion hazards exist under normal operating conditions.
- 8.4.3** Verify that the design of subsystems other than fire protection have taken into consideration any potential for fire hazards.
  - 8.4.3.1** Verify that, in areas where a fluid system might leak flammable fluids or vapors, there is a means to minimize the probability of ignition of the fluids and vapors and to minimize the resultant hazards if ignition does occur.
  - 8.4.3.2** Verify that provisions exist for air vehicle safety-critical components to withstand fire and heat to a predetermined safe level.
- 8.4.4** Verify that provisions for drainage and ventilation of combustible fluids or vapors are adequate to preclude the occurrence of fire or explosion hazards.
  - 8.4.4.1** Verify that drainage and ventilation provisions are located so that combustibles are removed from the air vehicle to a safe location on the ground and will not reenter the air vehicle in flight or ground operations.
- 8.4.5** Verify that drains and vents from areas that might carry flammable fluids are not manifolded with drains from areas that do not carry a potentially flammable fluid.
- 8.4.6** Verify that engine nacelle cooling and ventilation provisions are adequate to provide required heat rejection and maintain nacelle conditions necessary to avoid both hot surface ignition sources and collection of flammable fluids or vapors.
- 8.4.7** Verify that all potential fire zones (e.g., engine, auxiliary power unit (APU) and other compartments, such as engine-driven airframe accessory area) are designated as such and that suitable fire warnings and protection are provided.
- 8.4.8** Verify that essential flight controls, engine mounts, and other flight structures located in designated fire zones or adjacent areas are constructed of fire-proof material or shielded to withstand the effects of fire.
- 8.4.9** Verify that each electrically powered fire protection subsystem (e.g., fire detection, extinguishing, and explosion suppression) is provided power at all times during air vehicle operations, including engine start.
- 8.4.10** Verify that the air vehicle explosion suppression system meets performance requirements for fire and hazard protection.

- 8.4.11 Verify that the fire detection system is designed to preclude false warnings.
- 8.4.12 Verify the performance of the fire suppression system.
- 8.4.13 Verify that fireproof protective devices have been provided to isolate a fire within a defined fire zone from any portion of the airplane where a fire could create a hazard.
- 8.4.14 Verify air vehicle interior finishes and materials deter combustion and that any toxic by-products of combustion are at acceptable levels.
- 8.4.15 Verify that hazardous quantities of smoke, flames, or extinguishing agents are prevented from entering inhabited areas, UAV control station, or UAV flight-critical sensor bays.
- 8.4.16 Verify that proper separation is provided between oxidizers and flammable fluid systems or electrical components.
- 8.4.17 Verify that provisions are available to shut off flammable fluids and de-energize all electrical ignition sources in the identified fire zone(s).
- 8.4.18 Verify that ground fire-fighting access provisions are compatible with standard ground fire-fighting systems.
- 8.4.19 Verify that the air vehicle provides safety features for post-crash fire and explosion hazards.
- 8.4.20 Verify that the air vehicle has provisions to detect and control overheat conditions that are potential fire and explosion hazards.

## 8.5 Landing gear and deceleration systems.

- 8.5.1 Verify safe ground flotation capability of the landing gear systems.
- 8.5.2 Arrangement, dynamics, and clearances.
  - 8.5.2.1 Verify that the landing gear arrangement and servicing criteria will prevent any ground contact (including servicing equipment, arresting cables, runway lights, etc.) for all weapons loading, engine runs, and for flat gear/flat tire situations.
  - 8.5.2.2 Verify that, for all ground operations, the air vehicle will maintain operational control and stability such that no part of the air vehicle or its weapons will contact the ground or other permanent ground structures (servicing equipment, arresting cables, runway lights, etc.).
  - 8.5.2.3 For retractable gears, verify that there is sufficient clearance within the wheel well under all ground and flight conditions so that no part of the gear will contact the airframe or get stuck in the up position due to interference with any air vehicle structure.

- 8.5.2.4 Verify that the design of the landing gear system prevents the occurrence of unsafe dynamics, vibrations, or pitching motions for all operational phases of the air vehicle on the ground and in the transition to air.
- 8.5.2.5 Verify that the air vehicle does not tip back when reverse braking or towing is done at the specified conditions.
- 8.5.2.6 Verify the landing gear kneeling capability allows for safe kneeling of the air vehicle.
- 8.5.2.6.1 Verify the servicing procedures for landing gear kneeling and unkneeling are safe and properly sequenced.

**8.5.3** [Landing gear structure.](#)

- 8.5.3.1 Verify that any structural failure of the gear will not result in penetration of the crew station (for manned air vehicles), fuel tanks, or any other bay that may explode.
- 8.5.3.2 Verify the functionality of the shock strut to perform all its required energy absorption for all ground operations, landing, and takeoffs with normal servicing and with acceptable levels of misservicing.
- 8.5.3.3 Verify that a misserviced gear will safely support all weapons loading, fueling/defueling, will not compromise takeoff and landings, or result in ground resonance.
- 8.5.3.4 Verify that, for both main and nose/tail landing gear, landing conditions (normal and emergency) are within the safe operating limits.
- 8.5.3.5 Verify that dynamic stability is adequate and landing gear shimmy is not evident.
- 8.5.4 Verify that all mission and all ground handling conditions, including maximum air vehicle deceleration at the most critical C.G. and gross weight, have a maximum expected tire load and speed below that demonstrated for the selected tire at its rated inflation pressure.
- 8.5.5 Verify that the worst-case loads expected during operational missions on the nose/tail wheels and main gear wheels are not exceeded.
- 8.5.6 Verify that protection is incorporated to preclude wheel overheating and overpressurization.

**8.5.7** [Brake.](#)

- 8.5.7.1 Verify that the energy, torque, and distance performance are at least equal to the levels required for the air vehicle when it is operated within its design limits.
- 8.5.7.2 Verify that failure of any brake (structural or control system) will not prevent the air vehicle from stopping within the runway length needed to conduct the missions.

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8.5.7.3 Verify that the brakes can provide sufficient torque to hold the air vehicle still with at least normal preflight engine run test thrust levels.

8.5.7.4 Verify that an appropriate device is installed to release pressure if the brakes overheat.

8.5.7.5 Verify that the pressure release device will release before the wheel structure is compromised.

### **8.5.8** Brake control and anti-skid control.

8.5.8.1 Verify that there is a separate and independent method of stopping the air vehicle within the required distances when the primary stopping method is unavailable.

8.5.8.2 Verify that the pilot can maintain control of the braking function from his station in a smooth and controllable manner for all normal and emergency operations.

8.5.8.3 If a parking brake is required, verify that it provides holding power for the required time and conditions.

8.5.8.4 Verify safe stopping performance for all expected runway conditions (dry, wet, snow, ice, etc.) over all mission speed ranges and for all ground maneuvering conditions.

8.5.8.5 Verify that anti-skid system design can respond to any power interruptions or system malfunctions without compromising the ability of the pilot to control the air vehicle.

8.5.8.6 Verify that the anti-skid system precludes locked wheel/tire occurrences for all normal operating conditions.

8.5.8.7 Verify that brake control power is equal and proportional to brake pedal movement.

8.5.8.8 Verify that when pedal pressure is removed, pedals return to brakes-off position and that brake control power is not trapped or slow to release at any brake.

8.5.8.9 Verify that all modes of brake operation are safe.

8.5.8.10 Verify that the anti-skid control system is compatible with and will continue to function in the installed environment and that heat buildup will not cause locked wheels on touchdown or during the landing roll.

8.5.8.11 Verify that there is no anti-skid coupling into the landing gear structure.

### **8.5.9** [Directional control.](#)

8.5.9.1 Verify that there is a primary and emergency method to provide directional control during ground operations of the air vehicle for all the operational missions and flight configurations.

- 8.5.9.2 Verify that the steering control system protects against steering failures and that system failures will not cause loss of control of the air vehicle.
- 8.5.9.3 Verify that the pilot can maintain control of the air vehicle during engagement or disengagement of the steering throughout all the operational speed ranges and conditions, even if it occurs from a pilot commanded or a system uncommanded action.
- 8.5.9.4 Verify that the steering control system can detect and correct steering hardovers.
- 8.5.9.5 Verify that steering system operation during taxi, takeoff, and landing is sufficient to accomplish all the required ground maneuvering and parking, and is not sensitive to high-speed, ground rolling effects on directional control.
- 8.5.10 Landing gear control.**
  - 8.5.10.1 Verify safe operation of landing gear retraction, extension, and emergency extension; and verify that there are adequate clearances and suitable geometry for components having relative motion.
  - 8.5.10.2 Verify that loss of doors, reversal of commands, or any other single failures in the air vehicle power will not prevent gear extension. Verify that the emergency extension system is independent of the landing gear primary power source(s).
  - 8.5.10.3 Verify that proper gear position indications are given to flight crew for all gear sequencing events during any phase of mission operations.
  - 8.5.10.4 Verify that the gear position warning system operates properly, and that the crew can override the warning systems.
  - 8.5.10.5 Verify that the time to move the gear to the command positions is compatible with air vehicle performance requirements for takeoff, landing, and go-around.
  - 8.5.10.6 Verify that the emergency extension times are compatible with emergency landing requirements.
  - 8.5.10.7 Verify that the gear will be restrained in the final commanded positions for all ground and flight conditions required by all mission profiles.
  - 8.5.10.8 During ground operations verify that a positive means is provided to lock the gear and doors to prevent retraction on the ground; and that visual indicators are provided so the ground retention devices are removed prior to flight.
  - 8.5.10.9 Verify that no damage to airframe or gear structure results if power is supplied to retract the gears when ground retention devices are installed.
  - 8.5.10.10 Verify the downlocking and uplocking fail-safe provisions of the landing gear.

**8.5.11** [Auxiliary deceleration devices.](#)

- 8.5.11.1 Verify that the arresting system is capable of stopping the air vehicle at all the required design conditions (refused takeoffs (RTOs), fly-in engagements, brake overruns, etc.) without any damage to either the air vehicle or the arresting systems.
- 8.5.11.2 Verify the safety of the following: hook load hold-down and damping forces, engagement probabilities, off-center engagement capabilities, lateral run-outs, barrier compatibility and any other specific engagement provisions.
- 8.5.11.3 Verify that the crew can operate the hook from the crew station in a timely manner and that the crew has the capability to determine the position of the hook.
- 8.5.11.4 Verify that no part of the landing gear, air vehicle, or stores snags the arresting cable when the air vehicle is rolling on rims after a tire failure.
- 8.5.11.5 Verify that the performance of drag chutes meets the specified deceleration requirements without any adverse loading or damage to air vehicle structure.
- 8.5.11.6 As applicable to the air vehicle, verify the performance of thrust reversers, speed brakes, and/or other auxiliary deceleration systems; and verify that there is no adverse loading or structural damage to the air vehicle when these devices are used.

**8.5.12** [Ground handling.](#)

- 8.5.12.1 Verify that safe jacking provisions are provided and satisfy all specified air vehicle gross weight conditions as well as environmental conditions.
- 8.5.12.2 Verify that the jacking interface meets the defined standards including appropriate international standards.
- 8.5.12.3 Verify that the air vehicle is capable of being safely towed in all specified directions, at all mission weights, under the required environmental conditions, on expected operational surfaces.
- 8.5.12.4 Verify emergency towing capability of the air vehicle to the maximum weight and load requirements.
- 8.5.12.5 Verify that all mooring requirements have been met for all mission weights and environmental conditions, and that these requirements address the defined standard arrangements and interface for mooring to ensure safety.
- 8.5.12.6 Verify that the specialized systems requirements and functional characteristics are safe for the operational mission conditions. (Examples of specialized systems are skis, skids, kneeling, crosswind positioning, and in-flight pressure control systems.)
- 8.5.12.7 Verify all known potential single-point failures are identified and are acceptable.

- 8.5.12.8 Verify that the air vehicle will not turnover for all mission side loads conditions. All taxi and turn conditions at all gross weights should be covered for all possible strut/tire conditions and for adversely sloped taxiways and runways.
- 8.5.12.9 Verify the landing gear and engine inlet geometry are designed to prevent possible FOD to engines.
- 8.5.12.10 Verify that the landing gear systems are compatible with air vehicle structure, weight and balance, and any other systems that interface with the system.
- 8.5.12.11 Verify landing gear systems integrity in preventing uncommanded or unsafe effects in the event of single-point failures, dormant failures, or primary system loss.
- 8.5.12.12 Verify that the system and system components have damage tolerance capability to sustain partial failure or leakage before failure without jeopardizing safety.
- 8.5.12.13 Verify that failures and leakage are evident in flight and/or during routine ground maintenance.
- 8.5.12.14 Verify that adequate and safe lift points are provided for air vehicles that require routine external ground crew movement utilizing hands, mechanical lifts, hoists, etc.

## **8.6 Auxiliary/emergency power system(s) (APS/EPS).**

(Includes auxiliary power units, airframe accessory gearboxes, engine starting system components, power take-off (PTO) shafts, emergency power systems, ram air turbines (RATs).)

- 8.6.1 Verify that system components are safe for the intended use and environment.
- 8.6.2 Verify that the APS/EPS operates safely under installed operating conditions over the design envelope.
  - 8.6.2.1 Verify that protective safety features (auto shutdown, etc.) are available and effective in protecting the equipment against hazardous malfunctions and conditions such as over-speed, over-temperature and inadvertent activation.
- 8.6.3 Verify that the integrated system functional and physical compatibility is safe.
- 8.6.4 Verify that high-speed rotating components have been designed to be damage tolerant; or, that there are provisions for containment of failed parts and that any potentially uncontained fragments will not damage SOF components or injure personnel.
  - 8.6.4.1 Verify that containment or other provisions preclude a failed PTO shaft (flex joint) from causing secondary damage to nearby SOF component/systems as a result of flailing or whipping.
- 8.6.5 Verify that APS/EPS equipment in the installed configuration is free of damaging vibrations at all operating conditions throughout the APS/EPS operational envelope.

- 8.6.5.1 Verify that a critical speed margin exists with the installed PTO shafting system.
- 8.6.6 Verify that the emergency power system (to include the APU or jet fuel starter (JFS) when deemed flight essential) is capable of responding to failures and providing adequate levels of bleed air, shaft, electrical and/or hydraulic power in sufficient time to meet design requirements.
- 8.6.7 Verify that provisions for the following adequately address safety:
  - a. Structural mounting
  - b. Wiring and plumbing support, routing, and clearances
  - c. System/component and compartment drainage (see 8.4)
  - d. System/component and compartment cooling and ventilation (see 8.4)
  - e. System/components designed for appropriate level of fire hardening (see 8.4)
  - f. Accessibility to all required inspection and servicing features and areas
- 8.6.8 Verify that the inlet and exhaust hazards (i.e., velocities, temperatures, acoustics, exhaust by-products, etc.) to the ground/flight/passenger personnel, air vehicle subsystems, and air vehicle structure are acceptable.
- 8.6.9 Verify that personnel hazards are properly documented in the appropriate operator and maintenance manuals (T.O.'s) with warnings and precautions.
- 8.6.10 Verify that compatibility of the accessory drive system with the air vehicle accessories and engine drive system has been adequately evaluated for torsional vibrations and loads as well as possible misalignments.
- 8.6.11 Verify that all critical failure modes and hazards have acceptable risk levels.
- 8.6.12 Verify that the crew station provides for adequate control and monitoring of the system.
- 8.6.13 Verify that equipment service life, overhaul, and operating limits are safe and that life-limited components have a reliable means of tracking the limiting parameter.
- 8.6.14 Verify that the operator and maintenance manuals include normal and emergency operating procedures, limitations, servicing, and maintenance information.

## 8.7 Aerial refueling system.

- 8.7.1 Verify that aerial refueling operations can be safely and successfully accomplished with the targeted tanker/receiver aerial refueling subsystem(s).
  - 8.7.1.1 Verify that the operator and maintenance manuals for the air vehicle and the targeted tanker(s)/receiver(s) document safe aerial refueling procedures. The manuals should identify the proper instructions/information and placards noting restrictions and limitations in the use of the air vehicle's aerial refueling system(s) under all operating conditions (ground/in flight; normal/emergency).



- 8.7.1.2 Verify that there is dimensional, physical, electrical, and material compatibility between each aerial refueling interface and the targeted tanker's/receiver's aerial refueling interface to permit safe engagement.
- 8.7.1.2.1 Verify that all structural fastener heads around the receptacle are flush with the surrounding structural surface.
- 8.7.1.3 Verify that the aerial refueling system interface, its attachment to airframe structure, and the structure surrounding the interface can withstand the loads experienced during the aerial refueling process (engagement, disengagement, and fuel transfer) with the tanker/receiver interface(s) without being damaged or creating FOD.
- 8.7.1.4 Verify that cues (visual or equivalent) are provided on the air vehicle to assist the crewmember(s)/operator(s)/automated system(s) of the targeted tanker(s)/receiver(s) and the crewmember(s)/operator(s)/automated system(s) of the air vehicle during the aerial refueling process under mission-defined environmental conditions. Likewise, verify that cues (visual or equivalent) provided on the targeted tanker/receiver air vehicle(s) can be viewed/received as intended by the appropriate air vehicle crewmember(s)/operator(s)/automated system(s), during the aerial refueling process under mission-defined environmental conditions.
- 8.7.1.4.1 Verify that all markings used for aerial refueling are compatible with the expected environmental conditions and fluid exposures (fuel, hydraulic fluid, air vehicle cleaning solvents, etc.).
- 8.7.1.4.2 Verify that exterior aerial refueling lights are provided on the air vehicle to assist the targeted tanker/receiver crewmember(s)/operator(s)/automated system(s) and the air vehicle crewmember(s)/operator(s)/automated system(s) during the aerial refueling process.
- 8.7.1.4.3 Verify that the appropriate air vehicle crewmember(s)/operator(s)/ automated system(s) can view/receive exterior aerial refueling lights provided on the targeted tanker/receiver air vehicle(s), as intended, during the aerial refueling process.
- 8.7.1.4.4 Verify that the intensity of each exterior aerial refueling light, or light group, can be independently varied to accommodate the needs of the targeted tanker/receiver crewmember(s)/operator(s)/automated system(s) and the air vehicle crewmember(s)/operator(s)/automated system(s).
- 8.7.1.4.5 Verify that the appropriate exterior aerial refueling lights are compatible with night vision imaging systems (NVIS) or automated systems.
- 8.7.1.4.6 Verify that all exterior aerial refueling lights are compatible with the expected environmental conditions and fluid exposures (fuel, hydraulic fluid, air vehicle cleaning solvents, etc.).
- 8.7.1.5 Verify that a communication system has been provided which permits the timely exchange of all identified data/information between the crewmember(s)/operator(s)/automated system(s) of the air vehicle and the crewmember(s)/operator(s)/

- automated system(s) of the targeted tanker/receiver air vehicle(s) during the aerial refueling process.
- 8.7.1.6 Verify that the types of fuels to be transferred/received and any allowed deviations have been identified.
  - 8.7.1.7 Verify that the delivery pressure and flow rate of the transferred/received fuel have been identified and are within all applicable tanker/receiver design limits.
  - 8.7.1.8 Verify that surge pressures generated during the aerial refueling process do not exceed proof pressure limits for the aerial refueling system(s) of any air vehicle involved in the aerial refueling process.
    - 8.7.1.8.1 Verify that surge pressure conditions are safe, including (1) with and without a single failure in the tanker system's pressure regulation feature(s), (2) pump start-up surges (no flow to receiver), (3) all possible receiver valve closures (manually or automatically activated) which could terminate flow into the receiver, and (4) flowing disconnects.
    - 8.7.1.9 Verify that any spray resultant of the aerial refueling process does not negatively impact the safe operation of the air vehicle(s). (Fuel spray is typically created during the engagement and disengagement of the aerial refueling interfaces.)
      - 8.7.1.9.1 Verify that any fuel spray entering receiver engine(s), hazardous ignition areas, environmental management systems, and air data systems does not compromise safety.
      - 8.7.1.9.2 Verify that any fuel spray that covers or contacts lights, optical windows, antennae, and any other sensitive device does not compromise safety.
    - 8.7.1.10 Verify that satisfactory flight stability and handling qualities are achievable for the tanker/receiver aerial refueling interface within the specified aerial refueling envelope.
  - 8.7.2 [Verify that](#) each aerial refueling system can be installed and operated (normal and single-failure conditions) without causing loss of the air vehicle or creating a potential hazard to personnel in the identified environment (induced and natural).
    - 8.7.2.1 Verify that the system has been designed to minimize the hazards from lightning, static electricity, fuel leaks, ignition sources, and ground potential.
      - 8.7.2.1.1 Verify that the receptacle installation has a fuel- and vapor-proof pressure box below it to collect the fuel spray that may occur during aerial refueling.
      - 8.7.2.1.2 Verify that all fluids that collect within the pressure box are capable of being drained safely.
      - 8.7.2.1.3 For probe installations (retractable), verify that the probe compartment is fuel- and vapor-proof such that any fuel spray that may collect in this compartment does not migrate.

- 8.7.2.1.4 Verify that the collected fluids within the probe compartment are capable of being drained safely.
- 8.7.2.1.5 For aerial refueling pods, verify that there is adequate air flow/exchange within the pod to preclude the buildup of a flammable vapor within the pod.
- 8.7.2.1.6 Verify that all fluids that can be collected within the pod are capable of being drained safely.
- 8.7.2.1.7 Verify that a dry-run condition with an aerial refueling pump does not create a potential ignition source.
- 8.7.2.1.8 Verify that there is a secondary liquid- and vapor-tight barrier between the aerial refueling fuel tanks and identified fire hazard areas/inhabited areas.
- 8.7.2.1.9 Verify that each aerial refueling system can withstand the static discharge typically encountered during the engagement of tanker and receiver interfaces.
- 8.7.2.1.10 Verify that each aerial refueling system, in the open/deployed position and in the closed/retracted position, is designed to withstand the appropriate lightning strike criteria.
- 8.7.2.2 Verify that the flight control/handling qualities of the air vehicle are not negatively impacted when the aerial refueling system is installed or operating under normal aerial refueling and single-failure conditions.
  - 8.7.2.2.1 Verify that the flight control/handling qualities of the air vehicle are not degraded below safe limits, and the air vehicle can safely land when the system interface cannot be returned to its fully stowed configuration.
  - 8.7.2.2.2 For aerial refueling pods, verify that any ram air turbine (RAT) failure mode does not degrade flight control/handling qualities of the air vehicle below acceptable limits.
- 8.7.2.3 Verify that in-flight egress, ground emergency egress, and assisted egress of any crewmember are not affected when the system interface cannot be returned to its fully stowed configuration.
- 8.7.2.4 Verify that built-in-test (BIT) and fault isolation provisions are available to appropriate crewmember(s)/operator(s)/maintenance personnel to ensure safe ground or in-flight operations under all configuration options.
- 8.7.3** Verify that the flight control/handling qualities of the air vehicle are not negatively impacted by the removal of hardware associated with an aerial refueling system. For tankers, this may include pods, palletized systems, and fuel tanks that must be removed to reconfigure the tanker for another mission. For receivers, this may include probe installations that are not permanent.
  - 8.7.3.1 When aerial refueling hardware is removed, verify that interfaces with other systems (e.g., electrical, hydraulic, and fuel system) are properly covered, sealed, isolated, etc., to preclude providing a new leak or ignition source in the air vehicle.

- 8.7.4 Verify that each aerial refueling system, as installed, can meet its design and performance requirements when operated within the specified parameters.
  - 8.7.4.1 Verify that the plumbing/components in each aerial refueling system (as completely assembled and installed within the air vehicle) can withstand exposure to the specified proof pressure limit without resulting in fuel leakage and system performance degradation.
  - 8.7.4.2 Verify that critical operational functions and functional modes have been provided in the aerial refueling system that ensure the aerial refueling process can be conducted safely.
  - 8.7.4.3 Verify that controls have been provided and properly located for the appropriate crewmember(s)/operator(s) to activate and control the identified functions of the aerial refueling system.
  - 8.7.4.4 Verify that displays have been provided and properly located for the appropriate crewmember(s)/operator(s) to indicate the necessary information to conduct the aerial refueling operation safely.
  - 8.7.4.5 Verify that display lights are variable intensity and, if appropriate, NVIS compatible.
- 8.7.5 Verify that the installation and operation of each aerial refueling system (normal/single-failure conditions) does not negatively impact the operation of other systems on the air vehicle or on the targeted tanker(s)/receiver(s) throughout the mission(s) of the air vehicle or the targeted tanker(s)/receiver(s).
  - 8.7.5.1 Verify that the vent system of any fuel tank that contains aerial refueling plumbing can accommodate the maximum refuel/transfer rate and pressures associated with aerial refueling transfer rates encountered during normal aerial refueling operations and single-failure conditions.
  - 8.7.5.2 Verify that no ground or flight hazards are created if leakage occurs in the air vehicle fuel system and/or other aerial refueling system plumbing during aerial refueling operations. Consider leakage due to a failure of the sealing mechanism at the single-point refueling adapter, at the pressure defueling adapter, or at the other aerial refueling system interface(s).
  - 8.7.5.3 For tankers carrying a unique fuel for the designated receiver air vehicle(s), which cannot be utilized by the tanker's propulsion system(s), verify that there is adequate isolation of the aerial refueling system from the tanker's fuel system.
  - 8.7.5.4 Verify that any data communication system provided on the air vehicle is compatible with (1) the flight control system on the air vehicle, (2) other electrical systems on the air vehicle, and (3) the flight control and electrical systems on the targeted tanker(s)/receiver(s).
  - 8.7.5.5 Verify that the field of view of the crew member(s)/operator(s)/automated system(s) is adequate during landing or other critical flight phases when an aerial refueling system is installed, is operating, or fails to return to the fully stowed configuration.

- 8.7.5.6 When the plumbing of the aerial refueling system interfaces with the fuel system plumbing of the air vehicle or of other aerial refueling systems, verify that a leak in the aerial refueling system plumbing does not impact the fuel system's fuel management functions (engine feed, thermal management, center of gravity control, etc.).
- 8.7.5.7 Verify that electrical failures within the aerial refueling system will not adversely affect the air vehicle electrical system.
- 8.7.5.8 When aerial refueling components interface with the fuel or hydraulic system, verify that pressures and temperatures within the fuel/hydraulic system remain within safe limits under normal aerial refueling operations and single-failure conditions. Typical components for consideration are RAT-driven pumps in aerial refueling pods, aerial refueling pumps, probe door actuation/retraction mechanisms, probe extension/retraction mechanisms, and receptacle door/toggle latch mechanisms.

## **8.8 Propulsion installations.**

- 8.8.1 Verify that all engine/air vehicle physical interfaces are safe.
- 8.8.2 Verify that functional compatibility of the integrated system is safe.
- 8.8.3 Verify that engine bay/nacelle cooling and ventilation provisions are adequate to maintain the temperatures of power plant components, engine fluids, other bay/nacelle equipment and structure within the temperature limits established for these components and fluids, under ground and flight operating conditions, and after normal engine shutdown. (These provisions should be compatible with the fire protection certification criteria of 8.4.)
- 8.8.4 Verify that, when applicable, the engine mounted accessory gearbox/PTO shaft/airframe mounted accessory gearbox/system is free of any potentially damaging resonant conditions (refer to section 8.6 for additional details) for all loads and modes of operation.
- 8.8.5 Verify that the probability of failure due to uncontained rotating parts damaging SOF systems/items is acceptable.
- 8.8.6 Verify that clearance between the air vehicle and engine (including associated components, plumbing, and harnesses) is maintained under all operating conditions within the ground and flight envelopes.
- 8.8.7 Verify that drain systems have sufficient capacity, operate throughout required ground and flight attitudes and regimes, and expel/store the fluids in a safe manner.
- 8.8.8 Verify that the air vehicle propulsion controls and crew station information are adequate for proper crew control and operation of the propulsion system.
- 8.8.9 Verify that the air induction system(s) functions under all expected ground, flight and environmental (including icing as applicable) conditions without adversely affecting engine operation or resulting in engine damage.

- 8.8.10 Verify the engine air inlet components have adequate structural margin to withstand the over pressures generated by inlet/compressor anomalies.
- 8.8.11 Verify that exhaust systems direct exhaust gases to the atmosphere clear of the flight crew, boarding or discharging passengers, externally mounted equipment, fluid drains, air intakes, and stores.
- 8.8.12 Verify that thrust reverser/thrust vectoring systems are fail-safe and compatible with engine and air vehicle systems.
- 8.8.13 Verify that operator (flight) and maintenance manuals address normal and emergency operating procedures, limitations, servicing, and maintenance information.
- 8.8.14 Verify accessibility to propulsion-system-related equipment for the performance of required servicing, inspections, and maintenance.
- 8.8.15 Verify that airframe and propulsion systems eliminate sources of self-induced foreign object damage (FOD) to engines.
- 8.8.16 Verify that propulsion system performance and operability is adequate when air vehicle is operated in rain, sand, airborne debris, or ambient temperature extremes.

## 8.9 Mechanisms.

(Equipment involved in the securing, fastening, and mechanizing of air vehicle doors, hatches, ramps, weapon launchers, etc.; includes items such as locks, latches, bearings, hinges, linkages, indicators, and actuators.) Mechanical actuation subsystems that provide motion and position locking functions for stowable and deployable surfaces such as folding wing panels, folding rotor blade systems, folding tail rotors/pylons, air scoops, air vents, and weapons bay doors in ground and air applications for both operational and maintenance purposes. Equipment that is mechanical in form, fit, and function, but not covered by any other system-level requirements should be included herein.

- 8.9.1 Verify that all SOF critical mechanisms perform their allocated air vehicle functions under their specified operating environments and conditions.
- 8.9.2 Verify that damage or permanent deformation to any mechanism or support structure will not result in a critical jam load condition.
- 8.9.3 Verify that the failure of any mechanism will not cause the loss of control of the air vehicle or prevent continued safe flight and landing.
- 8.9.4 Verify that inadvertent loosening or opening of air vehicle doors, door latches, locks, or fasteners will not restrict the operation of any flight control system.
- 8.9.5 Verify that no single failure allows any latch to open inadvertently.
- 8.9.6 Verify that any locking system is incapable of locking or indicating it is locked unless all the latches are properly latched in the fully secured position.

- 8.9.7** Verify that all air vehicle doors, whose inadvertent opening would present a probable hazard to continued safe flight and landing, have provisions to prevent depressurization of the air vehicle to an unsafe level if the doors are not fully closed, latched, and locked.
- 8.9.8** Verify that the indication system will continuously monitor and provide an unsafe indication when the door, latching, or locking system is unsecured, and will provide a safe indication when the system is secured.
- 8.9.9** Verify that the door control systems are designed for emergency operation by means of manual actuation of the door/drive sequence.
- 8.9.10** Verify that all door seals prevent rain or water leakage into the air vehicle during all flight and ground operations and while the air vehicle is parked and depressurized under storm conditions.
- 8.9.11** Verify that all actuation subsystems are able to be locked and unlocked, provide for folding, unfolding, and deploying, and can be folded, unfolded, and deployed within a wind environment that encompasses atmospheric and weather-induced conditions, wind-over-deck from carrier vessel movement, and downwash and jetwash conditions caused by other vehicles expected in the operational ground/deck environment.
- 8.9.12** Verify that mechanisms that provide a structural load path incorporate redundant means of locking the mechanism in position.
- 8.9.13** Verify that, for UAVs, the locked-or-unlocked condition of mechanisms with position sensors is displayed in the ground control station during ground operation.
- 8.9.14** Verify that, when applicable, a means is provided for controlling utility actuation. Where possible, include a separate means for “motion” and “locking” control.
- 8.9.15** Verify that actuation subsystems that have a provision for manual operation include safety devices to prevent injury to maintainers in case of inadvertent application of power during a manually powered operation.
- 8.9.16** Verify that utility actuation subsystems are capable of operating from the ground power supplied to the air vehicle as well as air vehicle supplied power.
- 8.9.17** Verify that all actuation subsystems are able to perform their specified function within the specified safe time and cycle. Also specify allowable intervals between actuation cycles as well as total cycles expected during the application lifetime.
- 8.9.18** Verify that utility actuation subsystems incorporate some means to prevent damage to adjacent movable surfaces (for example, flaps) during folding and unfolding operations.
- 8.9.19** Verify that the actuation subsystem attachment is not an integral part of the air vehicle structure, such as a wing rib, but is a replaceable attachment designed so that, in case

of an overload or fatigue failure, the attachment fails in lieu of a structural component failure on the primary air vehicle.

**8.9.20** Verify that clearance is provided in the deployed or stowed position and during the deployment operation to prevent damage to the surface, attached equipment, and to other areas of the air vehicle.

**8.9.21** Verify that utility actuation mechanisms used during ground operations have a purely manual backup available for motive power and locking/unlocking purposes if the primary mode of operation is automatic or powered (or both). And verify that subsystems used for purely in-flight applications also have means incorporated to allow cockpit-controlled activation for ground maintenance actions.

**8.9.22** Verify that the locked-unlocked condition of mechanisms used during ground operations is displayed visually, externally, by purely mechanical, nonelectric means.

#### **8.10 External cargo hook systems (rotary wing).**

**8.10.1** Verify that the cargo hook system operation does not adversely affect safety of the air vehicle system.

**8.10.2** Verify that the cargo hook system cockpit switches and indicators provide for both normal and emergency release of cargo.

**8.10.3** Verify that the cargo can be hooked safely to the hook and that the manuals contain the maximum and minimum loads for safe movement of cargo.

**8.10.4** Verify that the electromagnetic environment of the air vehicle is compatible with safe loading and release of cargo.

#### **8.11 External rescue hoist (rotary wing).**

**8.11.1** Verify that the external rescue hoist system does not adversely affect safety to personnel or to the air vehicle system.

**8.11.2** Verify that the hoist system operates safely under rated and emergency loading conditions.

**8.11.3** Verify that the electromagnetic environment of the air vehicle is compatible with safe operation of the rescue hoist.

#### **8.12 Fast rope insertion/extraction system (FRIES) (rotary wing).**

**8.12.1** Verify that H-Bar and FRIES Bar provides for the safe insertion and extraction of personnel into and out of the air vehicle.

**8.12.2** Verify that the back-up structure possesses adequate structural margins of safety for the safe insertion and extraction of personnel.



## 9. CREW SYSTEMS

The crew systems area consists of the following elements: pilot-vehicle interface, aircrew station (accommodations, lighting, furnishings, and equipment), UAV control station (operator accommodations, lighting, and equipment), the life support system, the emergency escape and survival system, the transparency system, crash survivability, and air transportability.

### TYPICAL CERTIFICATION SOURCE DATA

1. Escape system requirements and validation
2. Crew station layout/geometry review
3. Human factors
4. Failure modes, effects, and criticality analysis (FMECA)
5. Life support system requirements and validation
6. Crash survivability requirements and validation
7. Lighting system design, analysis, test reports
8. Transparency integration
9. Air transportability, cargo, and airdrop systems
10. Load analyses
11. Aeroservoelastic analyses
12. Test plans
13. Test reports
14. Proof test results
15. Simulation test, modeling and results

### CERTIFICATION CRITERIA

#### 9.1 Escape and egress system.

This element provides the means whereby the occupant(s) can leave the air vehicle during in-flight, water, and ground emergencies. It may include the following equipment and devices: the ejection seat (if equipped), restraint system, escape sequencing system, cartridge actuated or pyrotechnic actuated devices (CAD/PAD), canopy jettison (including thrusters and rockets), escape path clearance, parachute(s), provisions for survival equipment (flares, medicine, radio, sustenance, arms, emergency oxygen, flotation equipment), manual bailout, emergency escape exits, escape paths, life rafts, slides, emergency ground egress provisions, and aeromedical evacuation.

- 9.1.1 Verify that the escape system is safe for use and that the escape system is compatible with the airframe and human tolerance limits.
- 9.1.2 Verify that escape exits and escape routes are provided in appropriate sizes and numbers for emergency landing and ditching to permit timely and complete egress of occupants.
- 9.1.3 Verify that emergency exits have operating instructions, lighting, and markings, both internally and externally.

- 9.1.4 Verify that devices for ground emergency egress assist (slides, descent reels, life rafts, etc.) and their deployment handles/actuators meet safety requirements.
- 9.1.5 Verify that ground emergency egress procedures exist and are issued to ground crash rescue personnel for aircrew rescue.
- 9.1.6 Verify that egress equipment exists to aid escape in the event that exits are blocked, are damaged, or have failed.
- 9.1.7 Verify that, if appropriate, the design allows each crewmember, in an emergency situation, to operate all controls that are essential for aircrew survival.

## 9.2 Crew station layout.

Aircrew station (accommodations, lighting, furnishings and equipment): This element provides the crewmember with crew station geometry covering workspace size and arrangement as specified by the anthropometric requirements, internal and external visibility necessary to perform the specified missions safely, cockpit illumination (primary, secondary, night vision imaging systems (NVIS), laser eye protection (LEP), utility and emergency lighting), thermal and acoustic protection, and storage facilities. Additionally, for manned air vehicles, other elements include sanitary facilities, cockpit finish and trim, instrument panel and consoles, and protection from cockpit generated reflections (glare shields). It may also cover boarding arrangements such as ropes or ladders. Crew and passenger accommodations may also be covered. This element also covers UAV control station requirements, where appropriate.

- 9.2.1 Verify that all controls and displays are arranged and located so that they are completely functional and visible and that cockpit geometry (including seats) accommodates the specified multivariate flight and mission crew population.
  - 9.2.1.1 Verify that all displays are readable, from all crewmember eye positions, under the full range of ambient conditions from full darkness to direct sunlight.
  - 9.2.1.2 Verify that the interior and exterior field of view are sufficient to safely perform all flight and mission-critical functions.
- 9.2.2 Verify that all controls are properly designed and can be operated through their complete range of travel without interference with other controls, structures, or crewmembers' bodies; and that all emergency action controls are reachable by the air crewmember from a restrained shoulder position in all air vehicle attitudes and through the complete "g" force loads.
- 9.2.3 Verify that the master caution and warning systems' displays are located in the prime visual signal area and all warning and caution situations are displayed.
  - 9.2.3.1 Verify that caution/warnings are accompanied by an alerting tone.
- 9.2.4 Verify that emergency action controls are properly marked.
- 9.2.5 Verify that lighting and illumination exists for crewmembers to perform all flight-critical tasks and the system is NVIS and laser eye protection (LEP) compatible, if applicable.

**9.3 Air vehicle lighting.**

This element involves the following: Lighting environments and mechanisms (e.g., NVIS, LEP) allowing crewmembers to see information from displays and instruments, to operate controls, to move safely throughout and emergency egress the compartment, to see other vehicles in formation and during aerial refueling, and to perform all other mission-critical functions where sight is necessary.

- 9.3.1** Verify that lighting systems exist to visually illuminate everything in or on the air vehicle that needs to be seen by crew, wing men, passengers, maintainers, and ground support personnel, regardless of ambient lighting conditions.
- 9.3.2** Verify that the lighting is fully controllable and uniform, and does not produce unacceptable glare, shadows, and reflections.
- 9.3.3** Verify that the lighting will allow the air vehicle to operate in commercial airways without restriction.
- 9.3.4** If appropriate, verify that the lighting is fully compatible with NVIS and LEP.

**9.4 Human performance.**

This element provides the means for the crewmember to monitor and control the system flight path management, navigation, caution, warning, advisory, communications, identification, propulsion, and mission and utilities subsystems. It covers presentation of emergency checklists and procedures. It encompasses the location and arrangement of the primary flight display suite, crew workload, situation awareness, and spatial disorientation aspects.

- 9.4.1** Verify that all functional operations can be safely performed including tasks performed by crew and maintainers.
  - 9.4.1.1** Verify that the primary flight display suite provides the necessary information to the crewmembers to safely perform all basic and unique flight maneuvers including emergency conditions.
- 9.4.2** Verify that all operating instructions, flight handbooks/checklists, flight/performance management and planning systems, etc., are not in conflict with system descriptions and procedures (normal and emergency) and actual system performance; that emergency procedures are clear and corrective actions do not create other hazardous situations; and that all procedures or pilot/vehicle interfaces can be accomplished within acceptable crew workload limits.
- 9.4.3** Verify that no unsafe blind spots exist from posts, canopy bow, windshield frames, heads up display (HUD) supports, etc.
- 9.4.4** Verify that the crew system interface is designed to reduce the potential for, and minimize the consequences of, a crew-induced error, and provides a simple means to correct an error.

**9.5 Life support systems.**

This element provides the human with breathing and anti-g provisions, and natural, induced, and combat hazard protection. This includes chemical biological protection, laser protection, cold water immersion protection, head protection, noise protection, altitude protection (pressure suits), protection from rapid decompression, personal services, etc.

- 9.5.1** Verify that the air vehicle integrated life support systems (for example, high altitude, “g” protection, ocular protection, and breathing) are fully functional and accessible within the flight envelope.
- 9.5.2** Verify that the system satisfies the physiological requirements of the occupants during mission, escape, and survival.
- 9.5.3** Where the life support system must interface with other air vehicle subsystems, verify that the operation of the life support system is not degraded by, and does not degrade, the normal or failure modes of operation of those subsystems (for example controls and displays, escape systems, communication, environmental management system (EMS)).

**9.6 Transparency integration.**

This element provides the crewmember with exterior vision capability in accordance with system requirements. It may consist of a remote camera system, a flat transparency window, a windscreen, and/or a canopy system. It also may include the transparency/canopy frame, canopy actuator, canopy latch/locking system, etc.

- 9.6.1** Verify that canopies and associated support structure, as well as the actuation, latching, and locking mechanisms, are compatible with the air vehicle escape system to permit safe egress and escape in the event of an emergency.
- 9.6.2** Verify that the transparency system meets bird-strike impact survivability requirements.
- 9.6.3** Verify that the structural/thermal capability of the transparency system is adequate for all loads and flight conditions.
- 9.6.4** Verify that the transparency system shape is compatible, and will not interfere, with crewmember and equipment positions and motions used during normal and emergency conditions.
- 9.6.5** Verify that the optical characteristics of the transparencies (windshield, canopy, windows, as applicable), including transmissivity, angular deviation, optical distortion, haze, multiple imaging, binocular disparity, birefringence, and minor optical defects are compatible with the safety-critical optical systems used by the air crew and provide a safe optical environment to the pilot.
- 9.6.6** Verify that necessary deployment power is available under normal and emergency conditions and that there is no interference with manual actuation of the canopy when air vehicle and/or external power is not available.

- 9.6.7 Verify that the environmental management system interface provides necessary defogging, pressurization, heating, cooling, humidity control, and ventilation of the transparency system under normal and emergency conditions.
- 9.6.8 Verify that provisions for rain removal, deicing and defogging, and snow and ice removal are adequate for pilot external vision and that these provisions do not cause temporary or permanent optical degradation of the transparencies.

## 9.7 Crash survivability.

This element provides the pilot, crew, and passengers with protection/procedures in the event of a crash scenario. It covers crash rescue procedures, fire protection, equipment containment, smoke protection, emergency lighting and seating.

- 9.7.1 Verify that seating system load capabilities are commensurate with the air vehicle type for aircrew and passengers and that the design of the floor and load paths to the seat attachments is capable of sustaining the loads of the seat system in applicable crash load conditions.
- 9.7.2 Verify that the stroke clearance envelope for energy absorbing seats is clear of structures and equipment that could impede seat stroke.
- 9.7.3 Verify that restraint systems are designed to restrain the occupant properly for the crash loading of the seat.
- 9.7.4 Verify that the strike envelope of the occupant during crash loads will be kept free of objects that are risks to survival or may cause serious injury that renders the crewmember unable to perform post-crash egress functions.
- 9.7.5 Verify that emergency oxygen is available for all occupants of the air vehicle.
- 9.7.6 Verify that the exits are post-crash operational up to the design crash loads.
- 9.7.7 Verify that, under design crash loads, items of high mass (objects which can cause injury to occupants) will hold their spatial position relative to the occupants.
- 9.7.8 Verify that the air vehicle is equipped with breathing and eye protection equipment, fire fighting equipment, and fire extinguishers appropriate for the expected use.
- 9.7.9 Verify that ditching provisions, including flotation devices for all occupants, are installed on all air vehicles without assisted escape systems.
- 9.7.10 Verify that precrash warning between aircrew and all compartments is possible without aircrew or occupants leaving their seating position.
- 9.7.11 Verify that, for rotary wing air vehicles, occupiable volume reduction as a result of design crash loads provides reasonable protection against occupant injury.
- 9.7.12 Verify that mechanisms used for emergency crew extraction and for firefighting are properly marked and can be operated while wearing personal protective equipment.

**9.8 Air transportability and airdrop.**

This element addresses technical requirements in the area of aerial delivery of cargo and personnel with regard to safety of the air vehicle. It may cover cargo restraint, tiedowns, external load equipment, transport of hazardous materials, handling/loading of either problem or unique cargo, and airdrop of cargo and personnel.

- 9.8.1** Verify that the air vehicle structure can support the loads (internal or external, as applicable) imposed by the cargo during operational usage.
- 9.8.2** Verify that clearance exists for aircrew and passengers during flight-critical and emergency functions.
- 9.8.3** Verify that cargo-loading manuals include shear, bending, crushing, or puncture load limits such that the cargo will not impart excessive loads into the air vehicle structure during any phase of the loading process.
  - 9.8.3.1** Verify cargo hook and backup structural load limits and verify that limits are included in applicable operators and maintenance manuals.
- 9.8.4** Verify that the positioned cargo meets required flight weight and balance requirements.
- 9.8.5** With the exception of items designated for airdrop, verify that the loaded item will not change the air vehicle C.G. position during flight.
- 9.8.6** Verify that restraints afford sufficient capacity and are provided in sufficient quantity to safely restrain the transported items.
- 9.8.7** Verify that all operator and maintenance manuals (T.O.'s) are accurate and provide cargo preparation, handling, carriage, and delivery procedures necessary for safe ground and flight operations.
- 9.8.8** Verify that cargo compartment dimensions allow enough room to safely load, transport, and/or airdrop required items.
- 9.8.9** Verify that air vehicle flight performance/control is not hazardously affected by movements in C.G. of airdrop loads or by load and C.G. movement experienced during external load operations.
- 9.8.10** Verify that air vehicle personnel airdrop systems can withstand the loads imposed by personnel during airdrop and possible personnel airdrop equipment malfunctions.
- 9.8.11** Verify that the air vehicle provides the capability to safely recover a towed ~~hang~~ jumper.
- 9.8.12** Verify that, for personnel airdrop, acceptable risk levels exist to avoid paratrooper collision, adverse vortex interaction, and adverse multi-ship formation effects induced by the air vehicles.
- 9.8.13** For airdrop or jettisonable cargo, verify the loaded items can be safely jettisoned during flight.

## 10. DIAGNOSTICS SYSTEMS

### TYPICAL CERTIFICATION SOURCE DATA

1. Failure modes, effects, and criticality analysis (FMECA)
2. Acceptance test procedures
3. Preflight test results
4. Built-in-test software
5. Flight test plan
6. Testability analysis reports
7. BIT demos reports
8. Test & evaluation master plan (TEMP)
9. Failure report and corrective action system (FRACAS) data
10. Test reports
11. System Safety Analysis Report

### CERTIFICATION CRITERIA

#### 10.1 Failure modes.

- 10.1.1 Verify that critical functional failure modes have been identified and detection methods incorporated.
- 10.1.2 Verify that all critical functional failures are linked to the caution and warning function and message.

#### 10.2 Operation.

- 10.2.1 Verify that the operation of air vehicle and ground diagnostic systems is proper for all SOF parameters.
- 10.2.2 Verify that critical parameter values can be measured within the established tolerances and that operation and calibration procedures are defined.
- 10.2.3 Verify that measures have been taken to ensure that the diagnostic system itself will not induce undetected failures or otherwise damage the air vehicle.
- 10.2.4 Verify functionality of safety systems that provide protection against catastrophic failures prior to potential need of the safety system.
- 10.2.5 Verify that all operator and maintenance manuals containing diagnostic systems are complete and accurate.

## 11. [AVIONICS](#)

Avionics certification criteria apply to manned air vehicle avionics, as well as airborne and ground segment avionics for UAVs.

### TYPICAL CERTIFICATION SOURCE DATA

1. Design criteria
2. Design studies and analyses
3. Design, installation, and operational characteristics
4. Design approval and system compatibility tests
5. Simulation tests and modeling results
6. Component and system level qualification and certification tests
7. Electromagnetic environmental effects
8. Hazard analysis and certification
9. Failure modes and effects analysis
10. Avionics flight-critical hardware and software
11. Avionics preliminary design review (PDR) and critical design review (CDR) open items
12. Avionics integration tests and results
13. Avionics/electronics integrity program documentation
14. Flight test simulation plan
15. System/subsystem self-test design and capabilities
16. Acceptance test plans, procedures, and results
17. Qualification test plans, procedures, and results
18. Functional configuration audit (FCA) and physical configuration audit (PCA) data
19. Test reports
20. Environmental analysis and test results

### CERTIFICATION CRITERIA

(Note: For subsystems that use computer resources, see section 15 for additional, specific criteria.)

#### 11.1 [Avionics architecture.](#)

This element addresses the avionics system requirements in the areas of the overall architecture. It may include the number and types of sensors, databases, redundancy provisions, integrity and continuity of service requirements, data interface requirements, characteristics of real-time operation, modes of operation, and integrated diagnostics. The intent of this element is to verify that the integrated avionics system is safe during all modes of operation.

- 11.1.1 Verify that the number and type of sensors, data processors, databases, controls and displays, and communications devices are adequate for SOF considerations. As a minimum, the following are provided:
  - a. Air data system, including provisions for displaying primary flight parameters



- b. Propulsion system instrumentation, with the ability to monitor performance, fuel status, and integrity of the system
  - c. Display of other air vehicle or vehicle management system parameters as required for safe flight
  - d. A radio communications subsystem capable of supporting SOF coordination with the required integrity and continuity of service throughout the intended missions
  - e. A navigation subsystem capable of meeting SOF performance, integrity, and continuity of service requirements for long range reference, local area reference, and landing/terminal reference
  - f. A surveillance and identification subsystem capable of meeting the SOF performance, integrity, and continuity of service requirements for identification, relative positioning, trajectory, timing, and intent.
- 11.1.2** Verify that redundancy has been incorporated such that failure of any single sensor, connection, processor, or display unit will not result in loss of safety-critical data or display of unsafe or misleading data.
- 11.1.3** Verify that data busses have sufficient redundancy, reliability, and integrity to meet system safety and flight-critical requirements to preclude.
- a. Loss of flight-critical functioning
  - b. Display of unsafe or misleading information to the operator or maintainer
  - c. Undetected failure modes
- 11.1.4** Verify that the avionics system and subsystems provide deterministic, real-time operation and limit latency of primary flight data as needed to support all safety-critical functions.
- 11.1.5** Verify that all normal, backup, and emergency modes of operation are safe for the integrated system.
- a. Verify that undetected failure modes (failures not automatically detected by diagnostics) will not result in unsafe system operation.
  - b. Verify that timing or latency anomalies will not result in unsafe system operation.
  - c. Verify that interface/interconnect failures will not result in unsafe system operation.
- 11.1.6** Verify that the avionics system integrated diagnostics will provide the fault coverage, low false alarm rates, fault isolation, and fault detection needed to detect bad data and failed components that would degrade safe operation.

**11.2 Avionics subsystems.**

This element addresses technical requirements for the individual avionics subsystems that are a part of the overall avionics architecture. It may include computers, communications, identification, navigation, air data, controls, displays, and sensors.

- 11.2.1** Verify that critical information is provided to the crew as follows:

- a. Verify that primary flight information is provided to the crew at all times and is fully legible in all mission environments, including full sunshine on displays, sun in the eyes, and total darkness
- b. Verify that accuracy of flight-critical instrumentation meets SOF requirements
- c. Verify that cautions and warnings are legible in all mission environments, are provided in an organized, prioritized system, and the presentation of high priority information is not masked by older or lower priority warnings and cautions
- d. Verify that instruments and symbols used to display flight-critical information employ accepted formats, directions, etc.
- e. Verify that BIT features of equipment alert the flight crew of flight-critical equipment status

**11.2.2** Verify that controls have adequate redundancy and/or reliability to maintain control of all safety-critical functions.

**11.2.3** Verify that data links used for safety- and flight-critical functions meet system safety- and flight-critical requirements to

- a. Preclude loss of flight-critical functioning and ensure SOF integrity and continuity of service throughout the intended missions
- b. Preclude display of unsafe or misleading information to the operator or maintainer, and to satisfy fault-tolerant SOF requirements

**11.2.4** Verify that each subsystem (including any off-the-shelf equipment) and the overall system will operate throughout the required operational environment without imposing a SOF risk. This verification typically includes environmental qualification and/or analysis.

**11.2.5** Verify safe avionics subsystem operation with required power characteristics.

### **11.3 Avionics air vehicle installation.**

This element provides the verification requirements that are unique to the installation of the avionics equipment onto the air vehicle.

**11.3.1** Verify that the avionics equipment installation, including arrangement, crashworthiness, and illumination, is adequate for SOF.

**11.3.2** Verify that flight manual and maintenance manual limits are adequate to conduct safe flight, including emergency operations.

**11.3.3** Verify that antenna patterns for safety/flight-critical transmitting and receiving equipment provide adequate coverage to preclude

- a. Loss of flight-critical functioning
- b. Display of unsafe information to the operator or maintainer
- c. Inadequate availability and continuity of service for SOF coordination/interoperability

## 12. ELECTRICAL SYSTEM

### TYPICAL CERTIFICATION SOURCE DATA

1. Design criteria
2. Design studies and analyses, including electrical loads analysis
3. Failure modes, effects, and criticality analysis (FMECA)
4. Hazard analyses
5. Functional operations test results
6. Performance test results
7. Installation and operational characteristics
8. Component and system qualifications
9. Flight manual, flight test procedures, and limitations
10. Wiring diagrams, which may include information regarding:
  - Wire types, wire sizes and current/voltage carried, wire identification, circuit breaker sizes and part numbers
  - Harness diameters including modified harnesses
  - Connector and accessories part numbers and identification
  - Clamping and part numbers
  - Miscellaneous parts identification and part numbers-nuts, bolts, washers, terminal lugs, environmental splices/shield terminations
11. 3D routing diagrams with several views and pictures
12. Visual assessment of the design implementation and installation
13. Component and system qualifications
14. Installed equipment list

### CERTIFICATION CRITERIA

(Note: For subsystems that use computer resources, see section 15 for additional, specific criteria.)

#### 12.1 Electric power generation system.

- 12.1.1 Verify that sufficient power is available to meet the power requirements during all modes of operation and failure conditions.
- 12.1.2 Verify that the operation of the electrical power generation system is safe, including adequate implementation of cooling provisions, status/failure indications, and mechanical/thermal disconnect of generators.
- 12.1.3 Verify that operation of the integrated system for normal and emergency modes is safe. This includes use of actual or simulated drives and loads, all flight and control configurations, transition between modes, bus switching, load shedding, and fault

condition operation (detection, clearing, and reconfiguration); and assurance that no single fault affects more than one power source.

- 12.1.4** Verify that required power quality is maintained for all operating conditions and load combinations.
- 12.1.5** Verify that the independent, uninterruptable power sources, including power control panels, are available to satisfy requirements of essential redundancy for flight-critical functions after failure of the primary power system and there is no single-point failure (including circuit boards) anywhere in the power system.
- 12.1.6** Verify that, if batteries are employed for SOF backup power, adequate charging methods and checks are provided and installation provisions for all batteries are safe.
- 12.1.7** Verify that emergency backup electrical power systems provide required power for flight conditions associated with the mission profiles of the platform and malfunction recovery procedures.
- 12.1.8** Verify that any subsystem limitations are defined and included in the appropriate manuals.
- 12.1.9** Verify that suitable normal and emergency operating procedures are included in the flight manual.
- 12.1.10** Verify that the system powers up in a safe state and, upon loss of power or power transient/fluctuation, the system remains in a known safe state or reverts to a known safe state.

## **12.2 Electrical wiring system, including power distribution.**

This element involves all wiring and wiring components (connectors, circuit breakers, etc.) throughout the air vehicle, and for UAVs, the control station safety of flight-related wiring system.

- 12.2.1** Verify that appropriate electrical wiring (conductor material and coating and insulation system), electrical system components, and support devices have been selected and are suitable for the physical environment in each area on the air vehicle and that installation is safe regarding shock hazard protection for personnel.
- 12.2.2** Verify that wiring has been sized properly for the required current handling capability and voltage drop.
- 12.2.3** Verify that proper circuit protection is provided for wiring associated with power distribution throughout its entire run, including circuits contained in or exiting from any electronic enclosures performing intermediate power switching or distribution functions.
- 12.2.4** Verify that redundant circuits provided for safety are sufficiently isolated.

- 12.2.5** Verify that there are no single-point failures related to wiring associated with integrating redundant functions within an electronics enclosure.
- 12.2.6** Verify that the design of the wiring system installation, including connectors, is adequate for all planned operating conditions.
  - 12.2.6.1 Verify that wiring in areas containing explosive vapors is protected to prevent potential ignition sources, including issues with aging and deterioration of the wiring.
  - 12.2.6.2 Verify that failure (either open circuit fault or shorted/crossed-circuits fault) within a wiring harness that includes safety-critical wiring does not cause loss of, or unacceptable degradation to, any safety-critical functions.
  - 12.2.6.3 Verify that the wiring design and installation procedures maintain positive separation (taking into account movement caused by dynamic G loading, thermal effects and vibration) of wiring from all fluid/gas carrying lines and flight controls.
  - 12.2.6.4 Verify that the routing design and installation procedures are such that the installation of wiring is free from chafing conditions.
  - 12.2.6.5 Verify that wiring design provides primary and secondary support for the wiring throughout the installation.
  - 12.2.6.6 Verify that maintainability is a factor in the design and installation procedures for wiring and components.
  - 12.2.6.7 Verify that all equipment and equipment racks are designed for proper electrical bonding.

### 13. ELECTROMAGNETIC ENVIRONMENTAL EFFECTS (E3)

#### TYPICAL CERTIFICATION SOURCE DATA

1. E3 design criteria, analysis, and tradeoff studies
2. Results of E3 modeling and simulation
3. E3 failure modes, and effects, and criticality analyses
4. Electromagnetic hazard analyses
5. Equipment/subsystem E3 qualification reports
6. Details of installation and operation
7. System E3 qualification tests
8. Flight and operational manuals, and flight test procedures, and limitations
9. Safety-of-flight (SOF) certifications
10. Authorized radio frequency allocations

#### CERTIFICATION CRITERIA

##### 13.1 Component/subsystem E3 qualification.

- 13.1.1 Verify that all flight-critical equipment complies with the electromagnetic interference requirements that are appropriate for the system application or appropriate flight restrictions are imposed in the flight manuals for exceptions.
- 13.1.2 Verify that equipment/subsystems comply with conducted and radiated susceptibility requirements that reflect external radio frequency (RF) environments.
- 13.1.3 Verify that equipment complies with transient susceptibility requirements that include consideration of indirect effects levels derived from the external lightning environment.

##### 13.2 System-level E3 qualification.

- 13.2.1 Verify that all equipment and subsystems exhibit mutual electromagnetic compatibility.
  - 13.2.1.1 Verify that safety-critical subsystems have no undesirable responses.
  - 13.2.1.2 Verify that antenna-connected equipment is compatible with one another.
  - 13.2.1.3 Verify that antenna-connected equipment is not degraded beyond its operational requirements by any other on-board and off-board equipment to a level that would impact safety.
  - 13.2.1.4 Verify that on-board and off-board equipment and subsystems exhibit electromagnetic compatibility while operating within the intended external operational electromagnetic environment.

- 13.2.2** Verify that the system has met all requirements for lightning either direct (physical) or indirect (electromagnetic) effects.
- 13.2.3** Verify that neither fuel nor fuel vapors can be ignited as a result of the effects of lightning.
- 13.2.4** Verify the system will not be affected by electrostatic charging, such as that generated by motion through air, spinning rotor blades, turbine engine, fuels and fuels in motion, etc.
- 13.2.5** Verify that the system electrical bonding is adequate to ensure safe E3 system performance.
- 13.2.6** Verify that sources of electromagnetic radiation pose no hazard to personnel (HERP), fuel (HERF), and ordnance (HERO), and that the appropriate manuals include safe criteria regarding distance from on-board and off-board transmitters for personnel and fuel sources.
- 13.2.7** Verify that safety margins for electroexplosive devices are met.

**14. SYSTEM SAFETY**

## TYPICAL CERTIFICATION SOURCE DATA

1. System Safety Program plan
2. Preliminary hazard analyses
3. Subsystem hazard analyses (fault hazard analyses or fault tree analyses)
4. System hazard analyses
5. Operating and support hazard analyses
6. Test hazard analyses
7. Occupational health hazard assessment
8. Specialized analyses such as a sneak circuit analyses and software hazard analyses
9. Type T-2 modification documentation (for correction of safety deficiencies)
10. Component/system test results (waivers/deviations and equipment conditional usage documents)
11. Minutes of System Safety group meetings (open items)
12. Minutes of System Safety program reviews (open items)
13. Engineering change proposals (safety related)
14. Hazard identification, evaluation and correction-tracking system files
15. Safety assessment reports
16. SOF test plans and test results
17. Test temporary engineering orders (not previously included in any safety analyses)
18. Failure modes, effects, and criticality analysis (FMECA)
19. Hazard risk index
20. MIL-STD-882, System Safety Program Requirements
21. Test review board reports
22. Safety review board reports
23. Flight readiness review reports

## CERTIFICATION CRITERIA

**14.1 System safety program.**

- |          |  |
|----------|--|
| 14.1.1   | Verify that an effective system safety program, that effectively mitigates risks/hazards and that documents and tracks the risks/hazards of the design/modification, is implemented. |
| 14.1.1.1 | Verify that the system safety program incorporates system safety into all aspects of systems engineering.  |
| 14.1.1.2 | Verify that appropriate analysis tasks of Mil-STD-882 have been accomplished for all programs, including temporary and permanent modifications.                                      |



14.1.1.3 Verify that hazards/risks are tracked and residual risk documented.

14.1.1.4 Verify that the system safety program has addressed the following:

- a. Flight safety
- b. Ground/industrial safety
- c. Explosives and ordnance safety
- d. Range safety
- e. Nuclear safety
- f. Radiation/laser safety
- g. Test safety and support
- h. Software
- i. Materials
- j. Failure modes and effects testing and built-in-test
- k. Fail safe design
- l. Support equipment

#### 14.2 Safety design requirements.

14.2.1 Verify that a systematic process is employed that provides for hazard identification, hazard control requirement generation and implementation, and residual risk assessment.

14.2.2 Verify that the design is free from unacceptable mishap risk.

14.2.3 Verify that no single-point failure will unacceptably impact the safety of the system.

14.2.4 Verify that the design adequately protects the power sources, controls, and critical components of redundant subsystems.

14.2.5 Verify that all aspects of human factors are addressed and unacceptable human factors safety issues/risks are resolved as part of the design process.

14.2.6 Verify that the design is produced to ensure risk reduction of failures or hazards created by human error in the operation and support of the system.

14.2.7 Verify that the system design is within acceptable risk bounds over worst-case environmental conditions.

14.2.8 Verify that the installation process and location of systems in the air vehicle result in acceptable risk for personnel exposure to hazards.

14.2.9 Verify that the design isolates hazardous substances, components, and operations from other activities, areas, personnel, and incompatible material.

**14.3** Software safety program.

- 14.3.1** Verify that a comprehensive software safety program is integrated in the overall system safety program.
- 14.3.2** Verify the software safety program requires that appropriate software safety-related analyses be performed as part of the software development process.
  - a. Software safety analyses preparation
  - b. Software safety requirements analysis
  - c. Software safety code analysis
  - d. Software safety test analysis
  - e. Software safety change analysis
- 14.3.3** Verify that the design/modification software is evaluated to ensure controlled or monitored functions do not initiate hazardous events or mishaps in either the on or off (powered) state.

## 15. COMPUTER RESOURCES

### TYPICAL CERTIFICATION SOURCE DATA

1. Computer resources utilization
2. Design review/audits/meeting minutes and action items
3. Software requirements specifications (SRS)
4. Software top-level design documents (STLDD)
5. Software development plans (SDP) and/or software development integrity master plans (SDIMP)
6. Software test plans, procedures, and reports
7. Quality assurance and configuration management plans
8. Master test planning documents and scheduling
9. Software regression testing criteria/procedures (all levels)
10. Software development folders
11. Failure modes, effects, and criticality analysis and testing (FMECA/FMET) or equivalent
12. Hazard analyses (software)
13. Test reports

### CERTIFICATION CRITERIA

#### 15.1 Air vehicle processing architecture.

- 15.1.1 Verify that the flight-essential configurations have been identified and proper levels of redundancy (hardware and software) exist at the system level to preclude loss of critical processing capabilities.
- 15.1.2 Verify that all processing elements of the architecture, which interface (physically and functionally) with SOF functions, are designed as SOF.
- 15.1.3 Verify that all hardware and software safety/flight-critical items are identified and accounted for in the architecture.
- 15.1.4 Verify that SOF hardware and software interfaces are clearly defined and documented and that control flow and information flow has been established.
- 15.1.5 Verify that redundancy (hardware and software) has been incorporated to satisfy fault tolerant SOF requirements, including probability of loss of control (PLOC) and reliability numbers.
- 15.1.6 Verify that separate and independent power sources are provided for redundant operations.
- 15.1.7 Verify that single component failure will not impede redundant operations.

- 15.1.8 Verify that physical and functional separation between safety/flight critical and mission critical is accounted for in the computer system architecture.
- 15.1.9 Verify that no patches (object code changes not resulting from compilation of source code changes) exist for flight-critical software.

**15.2 Functional design integration of processing elements.**

- 15.2.1 Verify that all parameters passed among SOF processing elements are defined and that unnecessary coupling has been avoided.
- 15.2.2 Verify that level of autonomy achieved by the flight-essential elements is sufficient to preclude loss of flight due to failure in mission- or maintenance-related elements.
- 15.2.3 Verify that a controlled methodology has been established and applied to integrate all safety-critical elements of the processing architecture, including verification coverage.

**15.3 Subsystem/processing element.**

**15.3.1 Electronics**

- 15.3.1.1 Verify that all computer resources hardware components are safe and SOF elements have redundant buses that are physically separated.
- 15.3.1.2 Verify that all safety/flight-critical electronic components are physically and functionally separated from non-safety-critical items. (This includes items such as processors, memory, internal/external buses, input/output (I/O) management, internal/external power supplies, circuit cards, motherboards, etc.) If not separated, verify that non-safety-critical elements are treated as safety-critical items.

**15.3.2 Architecture mechanization.**

- 15.3.2.1 Verify that the executive/control structure execution rates are sufficient and consistently obtainable for SOF requirements given the control structure, priority assignments, and interrupts.
- 15.3.2.2 Verify that the software design, timing, control flow, interrupt structure, and data structures meet the required processing capabilities of the SOF subsystem/system real-time architecture.
- 15.3.2.3 Verify that all mode inputs, failure detection techniques, failure management, redundancy management, self-checks, and interfaces operate safely under all dynamic conditions.
- 15.3.2.4 Verify that embedded SOF software provides acceptable performance and safety.

- 15.3.2.5 Verify that the SOf software design has the necessary interrupt, reinitialization, resynchronization, recheck, and reconfiguration provisions to restart or reset safely and quickly in flight.
- 15.3.2.6 Verify that the method of SOf software loading and verification is safe and carefully managed. (This includes the software operational flight program (OFP) loaded on individual black boxes or the air vehicle-loadable OFP.)
- 15.3.2.7 Verify that the SOf software design has adequate self-check, failure monitoring, redundancy management, reconfiguration, voting, transient suppression, overflow protection, anti-aliasing, saturation interlock, memory protection, and techniques for preventing failure propagation to preclude SOf issues.
- 15.3.2.8 Verify that there is sufficient throughput margin for both input/output and processor capabilities (including memory) under worst-case mode performance scenarios for both average and peak worst-case loading conditions.
- 15.3.2.9 Verify that a controlled methodology has been established and applied to integrate all functional elements of a highly coupled, integrated OFP.
- 15.3.3** [Processing architecture](#) verification for SOf items.
  - 15.3.3.1 Verify the operation of BIT and redundancy/failure management algorithms.
  - 15.3.3.2 Verify that critical hardware/software discrepancies have been identified and corrected or mitigated.
  - 15.3.3.3 Verify that adequate configuration management controls are in place to ensure proper/ functionally compatible software loading for the intended use on the air vehicle.
  - 15.3.3.4 Verify that all communications are secure against unwanted intrusions and that security techniques used are implemented safely.

## 16. MAINTENANCE

### TYPICAL CERTIFICATION SOURCE DATA

1. Maintenance manuals/checklists (equivalent or supplement to –2 T.O.'s)
2. Inspection requirements (equivalent or supplement to –6 T.O.'s)
3. Life-limited/time replacement plan/list
4. Subsystem hazard analysis (SSHA)
5. Failure modes, effects, and criticality analysis (FMECA)
6. Maintenance records (including failure report and corrective action system (FRACAS))
7. Air Force Regulation (AFR) 8-2, T.O. 00-5-1
8. Test reports
9. Test plans

### CERTIFICATION CRITERIA

#### 16.1 Maintenance manuals/checklists.

- 16.1.1 Verify that servicing instructions are provided for all systems that require servicing; for example, fuel, engine oil, hydraulic systems, landing gear struts, tires, oxygen, escape system, etc.
- 16.1.2 Verify that cautions and warnings have been included in maintenance manuals, aircrew checklists, and ground crew checklists.
- 16.1.3 Verify that maintenance checklists are available for critical maintenance tasks, such as fuel and oxygen serving procedures; towing procedures and restrictions; jacking procedures; engine operation during maintenance; lifting procedures; integrated combat turn procedures, etc.
- 16.1.4 Verify that support equipment will not adversely impact the safety of the air vehicle.

#### 16.2 Inspection requirements.

- 16.2.1 Verify that ground crew work cards for preflight inspection have been coordinated with the aircrew checklists.
- 16.2.2 Verify that special inspection procedures are available for unusual or specified conditions, such as
  - a. Exceeding operating limits
  - b. Severe vibration
  - c. Engine stall
  - d. Foreign object damage to engine or structure
  - e. Excessive loss of oil

- f. Conditions requiring oil sampling and analysis
  - g. Severe braking action, hard landing, and running off runway
  - h. Air vehicle subject to excessive “g” loads or maneuvers outside the specified flight envelope
  - i. Lost tools
  - j. Emergency procedures implemented
  - k. Dropped objects or parts
- 16.2.2.1 Verify that life-limited items and replacement intervals are identified using relevant operational data.
- 16.2.2.2 Verify that all required inspection intervals are identified using relevant operational data.

## 17. ARMAMENT/STORES INTEGRATION

A store is any device intended for internal or external carriage, mounted on air vehicle suspension and release equipment, which may or may not be intended to be for in-flight separation from the air vehicle. Stores include missiles, bombs, nuclear weapons, mines, fuel and spray tanks, torpedoes, detachable fuel and spray tanks, dispensers, pods (refueling, thrust augmentation, gun, electronic countermeasures, etc.), targets, decoys, chaff and flares, and suspension equipment.

### TYPICAL CERTIFICATION SOURCE DATA

1. User requirements and design requirements and validation results
2. Design studies and analyses
3. Design, installation, and operational characteristics
4. Component and functional level SOF, qualification and certification tests
5. Electromagnetic environmental effects
6. Plume ingestion/propulsion compatibility tests and plume/gun gas impingement test.
7. Failure modes, effects, and criticality analysis/testing (FMECA/FMET)
8. Hazard analysis and classification to include explosive atmosphere analysis/test
9. Safety certification program
10. Computational, theoretical and/or semi-empirical prediction methods
11. Configuration: aerodynamic design and component location
12. Wind tunnel test results and correction methods
13. Mathematical representation of system dynamics
14. Loads analysis, wind tunnel and flight test results
15. Flutter, mechanical stability, aeroelastic, aeroservoelastic and modal analyses, wind tunnel and flight test results
16. Performance analysis
17. Environmental compatibility analysis and tests to include gun fire vibration analysis/test
18. Interface control documents
19. Store separation models, wind tunnel and flight test results
20. Flight manual
21. Flight test plan and test results
22. MIL-HDBK-1763, Aircraft/Stores Compatibility: Systems Engineering Data Requirements and Test Procedures
23. MIL-HDBK-244, Guide to Aircraft/Stores Compatibility
24. MIL-STD-1760, Aircraft/Store Electrical Interconnection System
25. MIL-A-8591, Airborne Stores, Suspension Equipment and Aircraft-Store Interface (Carriage Phase); General Design Criteria for
26. SEEK EAGLE engineering data
27. American National Standard for Safe Use of Lasers (ANSI Z136.1)
28. Nuclear Certification Impact Statement (NCIS)
29. Aircraft monitor and control (AMAC) and surveillance tests



- 30. Nuclear safety analysis report (NSAR)
- 31. Mechanical compatibility data
- 32. Electrical compatibility data
- 33. Certification requirements plan (CRP)
- 34. Operational flight program (OFP) source code
- 35. Systems integration lab data/results
- 36. Cooling analysis and ground/flight test results
- 37. MIL-HDBK-1530 Aircraft Structural Integrity Program
- 38. ASC/EN Stores Integration practice
- 39. Human factors to consider
- 40. Crew egress paths to consider
- 41. Aircraft weight and balance
- 42. Environmental analysis and test results

## CERTIFICATION CRITERIA

### 17.1 Gun integration and interface.

- 17.1.1 Verify that environment induced by gun operation is compatible with the air vehicle's limitations for muzzle blast and overpressure, vibroacoustics, cooling, egress, human factors, and loads of the air vehicle.
- 17.1.2 Verify that gun gases and plume do not create SOF hazards for the air vehicle.
- 17.1.3 Verify that gun gas impingement does not cause unacceptable erosion of air vehicle structure/skin.
- 17.1.4 Verify that the gun gas ventilation/purge system prevents accumulation of explosive gas mixture.

### 17.2 Stores integration.

- 17.2.1 Verify that the stores/air vehicle interface does not create unsafe conditions during ground and flight operations and that no unsafe environment is created for maintenance personnel.
- 17.2.2 Verify that the stores separate safely from the air vehicle throughout the air vehicle/store launch or jettison flight envelope.
- 17.2.3 Verify that the store or suspension and release equipment and air vehicle are structurally capable of operating safely in the air vehicle/store carriage flight envelope.
- 17.2.4 Verify that electrical interfaces do not cause unsafe stores operation or interactions with the air vehicle for all required store configurations.

- 17.2.5 Verify that the environment induced by the stores on the air vehicle, and by the air vehicle on the store during carriage and launch/separation/jettison for the cleared usage, does not adversely affect SOF of the air vehicle.
- 17.2.6 Verify that the stores operations do not adversely affect any safety aspect of the flight control of the air vehicle.
- 17.2.7 Verify that all stores configurations for the air vehicle are documented in the flight manuals.
- 17.2.8 Verify that malfunctioning stores can be turned off or released if required to protect the air vehicle.

**17.3 Laser integration and interface.**

- 17.3.1 Verify that the crew and maintenance personnel are not exposed to laser radiation (direct and reflected) in excess of maximum permissible exposure limits in order to ensure safe conditions.
- 17.3.2 Verify that the laser operation induced environment is compatible with the air vehicle's limitations for vibroacoustics, thermal loads, and structural loads of the air vehicle.
- 17.3.3 Verify that laser chemical and exhaust gases do not create SOF hazards for the air vehicle.
- 17.3.4 Verify that the crew is able to determine when the laser is operating and the direction of the beam.
- 17.3.5 Verify that laser operation and direction is under control of the crew and does not latch on (radiating).

## 18. PASSENGER SAFETY

The passenger safety section addresses technical requirements in the area of passenger carrying air vehicles as they pertain to safety. This area covers seat belts, stowage compartments, ditching, emergency exits, emergency evacuation, seating arrangements, emergency lighting, signs, fire extinguishers, smoke detection, lavatories, fire protection, and physiological requirements. Safety requirements for crew stations normally used for aircrew and mission essential personnel are located in section 9, Crew Systems.

### TYPICAL CERTIFICATION SOURCE DATA

1. Federal Aviation Regulations
2. FAA Airworthiness Directives and Advisory Circulars
3. Joint Service Specification Guide
4. Cabin/crew station layout/geometry
5. Crash survivability requirements and validation
6. Escape system requirements and validation
7. Life support system requirements and validation
8. Tech data package

### CERTIFICATION CRITERIA

#### 18.1 Survivability of passengers.

- 18.1.1 Verify that a seat equipped with a restraint system is provided for each occupant. Verify that seats are designed not to cause serious injury in an emergency landing and each seat/restraint system is designed to protect each occupant during an emergency landing provided the restraints are used properly.
- 18.1.2 Verify that each restraint system has a single-point release for occupant evacuation.
- 18.1.3 Verify that, if stowage compartments are present, they are designed to contain the maximum weight of its contents and the critical load conditions in an emergency landing. The contents should not become a hazard to passengers due to shifting under emergency landing conditions.
- 18.1.4 Verify that items of mass, including cargo, will not cause serious injury to the passenger in the event of an emergency landing on land or water.
- 18.1.5 Verify that each passenger carrying area has at least one external door that is operable from the inside and outside, is located as to where propeller injuries are avoided, and is inspected to ensure it is locked in flight.
- 18.1.6 Verify that exits are lockable and simple to open. Exits should not open in flight unless mission requirements necessitate this function.

- 18.1.7 Verify that each non-over-wing exit higher than 6 feet off the ground has a means to assist passengers to the ground. There should be provisions for evacuees to be assisted to the ground from the wing when the exit opens to the wing.
- 18.1.8 Verify that the weight of each passenger exit, if removable, and its means of opening, is conspicuously marked.
- 18.1.9 Verify that the means of emergency egress (e.g., use of explosive components for egress, sharp edges, hot metal percussion, etc.) does not cause serious injury or hinder procedures during evacuation.
- 18.1.10 Verify that an emergency lighting system, independent of the main lighting system, provides sufficient illumination and guidance for passenger and crew emergency evacuation. Verify that energy to supply lighting allows complete egress of all passengers and crew before diminishing.
- 18.1.11 Verify that each crew and passenger area has emergency means to allow complete abandonment in 90 seconds during ground egress of the air vehicle with half of the exits blocked, with the landing gear extended as well as retracted, considering the possibility of the air vehicle being on fire, and at maximum seating capacity. Note: The 90 second evacuation criteria is not applicable for patients and crew on aeromedical evacuation missions.
- 18.1.12 Verify that emergency exit signs are installed and that each seated passenger is able to recognize at least one emergency exit sign.
- 18.1.13 Verify that a public address system is installed that is powerable when the air vehicle is in flight or stopped on the ground, including after the shutdown or failure of all engines and auxiliary power units.
- 18.1.14 Verify that the public address system is accessible by all aircrew and is intelligible at all passenger seats, lavatories, aircrew seats, and workstations.
- 18.1.15 [Verify that](#) the public address system be capable of functioning independently of any required crewmember interphone system and be accessible for immediate use.
- 18.1.16 Verify that all installed equipment in passenger compartments is provided with a restraining means to protect passengers during an emergency landing.
- 18.1.17 Verify that a system exists such that the flight deck can readily communicate with other aircrew.
- 18.1.18 Verify that each safety equipment control to be operated in an emergency, such as controls for automatic life raft releases, is plainly marked to show its method of operation.
- 18.1.19 Verify that each location, such as a locker or compartment that carries fire extinguishing, signaling, or other life saving equipment is marked accordingly. Verify

that stowage provisions for required emergency equipment are conspicuously marked to identify the contents and facilitate easy removal of the equipment.

- 18.1.20 Verify that each life raft has obviously marked operating instructions. Ensure that approved survival equipment is marked for identification and method of operation and that emergency flotation and signaling equipment is installed so that it is readily available to the crew and passengers.
- 18.1.21 Verify that each life raft to be released automatically or by a crewmember is attached to keep it in place alongside the air vehicle until the raft is afloat on water. Verify that this attachment is sufficiently weak to break away from the air vehicle before submerging the fully occupied life raft to which it is attached.
- 18.1.22 Verify that readily accessible individual flotation devices are provided for each occupant if the air vehicle flies missions over water.
- 18.1.23 Verify that emergency lighting illuminates each exit and its exterior surrounding sufficient to allow egress. Verify that energy to supply lighting allows complete egress of all passengers and crew before diminishing.

## 18.2 Fire detection, suppression, and resistance.

- 18.2.1 Verify that the air vehicle is outfitted with equipment to deal with in-flight, ground, and ditching emergencies.
- 18.2.2 Verify that the air vehicle is equipped with breathing and eye protection equipment and fire extinguishers appropriate for the expected use.
- 18.2.3 Verify, if cargo lamps are present, that they are designed to prevent contact with cargo.
- 18.2.4 Verify that all interiors, including lavatories, are made of flame resistant materials.
- 18.2.5 Verify, if unoccupied cargo holds are present, that fire protection, fire detection/suppression, and smoke detector requirements are met.
- 18.2.6 Verify that oxygen equipment and lines are not located in any designated fire zone; are protected from heat that may be generated in, or escape from, any designated fire zone; are not routed with electrical wiring; and are installed so that escaping oxygen cannot cause ignition of grease, fluid, or vapor accumulations present in normal operation or as a result of failure or malfunction of any system.
- 18.2.7 Verify that lavatory smoke detectors are installed that alert the crew of a fire when the air vehicle is in flight as well as during air vehicle operation on the ground.

**18.3 Physiology requirements of passengers.**

- 18.3.1** Verify that ventilation systems provide adequate ventilation and cabin pressure for passengers.
- 18.3.2** Verify that air vehicles flying above 10,000 feet mean sea level (MSL) are capable of providing supplemental oxygen from the air vehicle, or from a stand-alone system, and are capable of delivering it to each passenger.
- 18.3.3** Verify that emergency medical kit(s) capable of providing medical support for the designed mission are installed in the air vehicle.

## 19. OTHER CONSIDERATIONS

### TYPICAL CERTIFICATION SOURCE DATA

1. Design criteria
2. Design studies and analyses
3. Design, installation, and operational characteristics
4. Design approval and system compatibility tests
5. Component and system level qualification and certification tests
6. Electromagnetic environmental effects
7. Hazard analysis and certification
8. Failure modes and effects analysis
9. Avionics integration tests and results
10. System/subsystem self-test design and capabilities
11. Qualification test plans, procedures, and results
12. Ground test results
13. FCA and PCA data
14. Flight manual
15. Software development plan
16. Software development and product specifications
17. Software test plans, test procedures, and test reports
18. Software configuration control/management plan and procedure
19. Flight test reports
20. Environmental analysis and test results

### CERTIFICATION CRITERIA

#### 19.1 Mission/test equipment and cargo/payload safety.

- 19.1.1 Verify that the following items do not adversely impact the primary SOF functionality (such as structural capability, flying and handling qualities, electronic compatibility) of the air vehicle:
  - a. Special non-SOF mission or test equipment and software including instrumentation and wiring
  - b. Non-SOF mission-specific equipment and software
  - c. Nonessential mission equipment (hardware and software)
- 19.1.2 Verify that carriage of cargo or payload does not adversely affect safety of the air vehicle system.
- 19.1.3 Verify that in-flight operation of mission-specific personnel and cargo equipment (e.g., cargo hooks, rescue slings and hoists, H-bar and FRIES bar) does not adversely affect safety of the air vehicle system.

## 20. NOTES

### 20.1 Intended use.

This document establishes the airworthiness certification criteria to be used in the determination of airworthiness of all manned and unmanned, fixed and rotary wing air vehicles. It is a foundational document to be used by the single manager, chief engineer, and contractors to define their airworthiness certification basis. These criteria apply at any point in a program or program phase where an airworthiness determination is required.

### 20.2 Changes from previous issue.

The margins of this handbook are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations.

### 20.3 Subject term (key word) list.

aerial refueling system  
air vehicle subsystems  
avionics  
computer resources  
crew systems  
diagnostics systems  
electrical power  
electromagnetic environmental effects  
environmental management system  
fire and hazard protection  
flight technology  
fuel system  
hydraulics and pneumatic systems  
integration, armament  
integration, stores  
landing gear and deceleration systems  
maintenance  
passenger safety  
power systems, auxiliary  
power systems, emergency  
propulsion installations  
propulsion  
structures  
system safety



## **APPENDIX**

### **AIRWORTHINESS CERTIFICATION CRITERIA**

#### **CROSS REFERENCE**

#### **A.1. SCOPE**

##### **A.1.1 Overview.**

This appendix provides a cross-reference to the Airworthiness Certification Criteria and to the documentation required to satisfy the airworthiness criteria. This document will be updated as required to incorporate additional references. Contact the appropriate member in the list of contacts for additional information or clarification.

##### **A.1.2 Information sources.**

Each section in the Airworthiness Certification Criteria is matched with corresponding Federal Aviation Regulations (FARs) and Joint Service Specification Guides (JSSGs). In addition, the complete listing of FAR advisory circulars was consulted for appropriate guidance in airworthiness certification.

The Federal Aviation Administration (FAA) issues advisory circulars (AC) to inform the aviation public, in a systematic way, of nonregulatory material. Unless incorporated into a regulation by reference, the contents of an advisory circular are not binding on the public. Advisory circulars are issued in a numbered-subject system corresponding to the subject areas of the FAR (Title 14, Code of Federal Regulations (CFR), Chapter I, Federal Aviation Administration). An AC is issued to provide guidance and information in a designated subject area or to show a method acceptable to the Administrator for complying with a related FAR. When using FARs for compliance with airworthiness certification criteria, consult applicable ACs for guidance.

#### **A.2. APPLICABLE DOCUMENTS**

##### **A.2.1 General.**

The documents listed below are not necessarily all of the documents referenced herein but are those needed to understand the information provided by this handbook. Refer to the current version of these documents, unless otherwise indicated.

##### **A.2.2 Government documents.**

###### **A.2.2.1 Specifications, standards, and handbooks.**

The following specifications, standards, and handbooks form a part of this document to the extent specified herein.

## MIL-HDBK-516A

### APPENDIX

#### DEPARTMENT OF DEFENSE

##### STANDARDS

MIL-STD-464	Electromagnetic Environmental Effects Requirements for Systems
MIL-STD-1787	Aircraft Display Symbolology

##### HANDBOOKS

MIL-HDBK-1530	Aircraft Structural Integrity Program
MIL-HDBK-87213	Electronically/Optically Generated Airborne Displays
MIL-HDBK-87244	Avionics/Electronics Integrity

(Copies of these documents are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094 or <http://www.dodssp.daps.mil> or <http://astimage.daps.dla.mil/quicksearch/>. Copies of documents indicating a distribution limitation (for example, statement D) may be ordered from ASC/ENOI, 2530 Loop Rd West, Bldg. 560, Wright-Patterson AFB, OH 45433-7101 or online at <https://www.en.wpafb.af.mil/engstds/engstds.asp>).

#### **A.2.3 Other Government documents, drawings, and publications.**

The following other Government documents, drawings, and publications form a part of this document to the extent specified herein.

##### ARMY REGULATIONS

AR 70-62	Airworthiness Qualification of U.S. Army Aircraft Systems
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(View copies of Army regulations via <http://www.apd.army.mil>.)

##### NAVAL AIR SYSTEMS COMMAND PUBLICATIONS

COMOPTEVFORINST  
3511.1C

Aircraft Tactical Manual (AIRTAC)

(View copies via <http://www.cotf.navy.mil/otd/aircraft.pdf>.)

NAVAIRINST 4130.1C	Naval Air Systems Command configuration management policy
NAVAIRINST 13030.2	Tailored applications of airworthiness standards for special purpose configurations of aircraft and weapons systems
NAVAIRINST 13100.15	Standard policy for accepting Commercial Derivative Aircraft
NAVAIRINST 5600.5B	System for preparation and issuance of interim changes to NATOPS flight manuals

(View copies of NAVAIRINST publications via <https://directives.navair.navy.mil/>.)

NWP 1-01

Naval Warfare Publications System

(Contact the Navy for copies of this publication.)

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### APPENDIX

OPNAVINST 3710.7S

NATOPS (Naval Air Training and Operating Procedures Standardization) General Flight and Operating Instructions

(View copies via <http://neds.nebt.daps.mil/Directives/3710/3710.htm>)

OPNAVINST 4790.2H

The Naval Aviation Maintenance Program (NAMP)

(View copies via [https://logistics.navair.navy.mil/4790/.](https://logistics.navair.navy.mil/4790/))

Click the link below to go to FAA Advisory Circular Library. Consult the advisory circular checklist (AC 00.2-XX) to determine the current status and version of referenced circulars.

([http://www2.airweb.faa.gov/Regulatory and Guidance Library/rgAdvisoryCircular.nsf](http://www2.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf))

#### A.2.4 Non-Government publications

The following document forms a part of this appendix to the extent specified herein.

##### RTCA, INC.

RTCA/DO-178            Software Considerations in Airborne Systems and Equipment Certification

RTCA/DO-160           Environmental Conditions and Test Procedures for Airborne Equipment

(Copies may be purchased from RTCA, Inc., 1140 Connecticut Ave., N.W., suite 1020, Washington, DC 20036.)

##### SOCIETY OF AUTOMOTIVE ENGINEERS

SAE AS50881, Aerospace Vehicle Wiring

(Copies are available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001. Order electronic standards online at

<http://www.sae.org/technicalcommittees/index.htm>.)

#### A.3. DEFINITIONS

This section is not applicable to this appendix.

## AIRWORTHINESS CRITERIA CROSS REFERENCE TABLE

## A.4. Systems Engineering

CERTIFICATION CRITERIA	SUPPORT DOCUMENTATION	FEDERAL AVIATION REGULATIONS
4. Systems Engineering		
4.1 Design criteria.		23.21, 23.601-23.629, 25.601-25.631
4.1.1	Appropriate design criteria paragraphs of JSSG-2000, 2001, 2005, 2006, 2007, 2008, 2009, 2010, and others.	23.21-23.3, 25.21-25.33
4.1.2	Appropriate design criteria paragraphs of JSSG-2000, 2001, 2005, 2006, 2007, 2008, 2009, 2010, and others.	23.21, 23.601-23.629, 25.601-25.631
4.1.3	Appropriate design criteria paragraphs of JSSG-2000, 2001, 2005, 2006, 2007, 2008, 2009, 2010, and others.	23.21, 23.601-23.629, 25.601-25.631
4.2 Tools and databases.		
4.2.1	Appropriate design criteria paragraphs of JSSG-2000, 2001, 2005, 2006, 2007, 2008, 2009, 2010, and others.	Refer to technical point of contact for this discipline (listed in section A.20).
4.3 Material selection.		
4.3.1	JSSG 2006 Appendix A: A.3.2.19, A.4.2.19, A.3.2.19.1, A.4.2.19.1, A.3.2.19.2, A.4.2.19.2	Refer to technical point of contact for this discipline (listed in section A.20).
4.3.2	JSSG 2006 Appendix A: A.3.2.19, A.4.2.19, A.3.2.19.1, A.4.2.19.1, A.3.2.19.2, A.4.2.19.2	Refer to technical point of contact for this discipline (listed in section A.20).
4.3.3	JSSG 2006 Appendix A: A.3.2.19, A.4.2.19, A.3.2.19.1, A.4.2.19.1, A.3.2.19.2, A.4.2.19.2	Refer to technical point of contact for this discipline (listed in section A.20).
4.3.4	JSSG 2006 Appendix A: A.3.2.19, A.4.2.19, A.3.2.19.1, A.4.2.19.1, A.3.2.19.2, A.4.2.19.2	Refer to technical point of contact for this discipline (listed in section A.20).

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
4.3.5	JSSG 2006 Appendix A: A.3.2.19, A.4.2.19, A.3.2.19.1, A.4.2.19.1, A.3.2.19.2, A.4.2.19.2	Refer to technical point of contact for this discipline (listed in section A.20).
4.3.6	JSSG 2006 Appendix A: A.3.2.19, A.4.2.19, A.3.2.19.1, A.4.2.19.1, A.3.2.19.2, A.4.2.19.2	Refer to technical point of contact for this discipline (listed in section A.20).
4.4 Manufacturing, support, and quality.		
4.4.1	ASC/EN Manufacturing Development Guide; AFI 63- 501;AS 9100	23.601-23.605, 25.601- 25.603
4.4.2	ASC/EN Manufacturing Development Guide; AFI 63- 501;AS 9100	23.601-23.605, 25.601- 25.603
4.4.3	ASC/EN Manufacturing Development Guide; AFI 63- 501;AS 9100	23.601-23.605, 25.601- 25.603
4.4.4	ASC/EN Manufacturing Development Guide; AFI 63- 501; FAR Part 46;AS 9100	23.601-23.605, 25.601- 25.603
4.4.5	JSSG 2006 Appendix A: A.3.11.6, A.4.11.6	Refer to technical point of contact for this discipline (listed in section A.20).
4.5 Operator's and maintenance manuals (technical orders).		23.1501, 23.1529, 25.1501, 25.1503-25.1533, 25.1529, 25.1541, 25.1543, 25.1557, 25.1563,
4.5.1	MIL-STD-38784, Standard Practice for Manuals, Technical: General Style and Format Requirements	23.1541, 25.1541
4.5.2	MIL-STD-38784, Standard Practice for Manuals, Technical: General Style and Format Requirements).	23.21, 25.21, 23.601, 25.601, 23.1301, 25.1301

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
4.5.3	MIL-HDBK-1530B, Aircraft Structural Integrity Program MIL-HDBK-87244, Avionics/Electronics Integrity JSSG-2001A, 3.3.5.1, 3.3.7.1 JSSG-2009, Appendix I	Refer to technical point of contact for this discipline (listed in section A.20).
4.6 Configuration identification.		
4.6.1	MIL-STD-961D: Appendix A, MIL-HDBK-61: Section 3	23.21, 25.21, 23.601, 25.601, 23.1301, 25.1301
4.6.2	MIL-STD-961D: Appendix A, MIL-HDBK-61: Section 3	23.21, 25.21, 23.601, 25.601, 23.1301, 25.1301
4.7 Configuration status accounting.		
4.7.1	MIL-HDBK-61, Section 5	23.21, 25.21, 23.601, 25.601, 23.1301, 25.1301

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### A.5. Structures

CERTIFICATION CRITERIA	SUPPORT DOCUMENTATION	FEDERAL AVIATION REGULATIONS
5. Structures	JSSG-2006 Aircraft Structures, NAVAIRINST 13034.1, AR 70-62, AR-56, AR-89	Part 23, Part 25
5.1 Loads.		
5.1.1	JSSG-2006: 3.4, 4.4, AR-56: 3.2-3.5	23.23-23.31, 23.301-23.302, 23.321-562, 25.23-25.31, 25.301, 25.321-25.563
5.1.2	JSSG-2006: 3.2.11, 4.2.11	23.23-23.31, 23.301-23.302, 23.321-562, 25.23-25.31, 25.301, 25.321-25.563
5.2 Strength.		
5.2.1	JSSG-2006: 3.10, 3.2.19, 4.10, 4.2.19, AR-56, AR-89: 3.5, 3.6, 3.7, 3.9, 3.11	23.303, 23.305, 23.601, 23.603, 23.613, 23.621-23.625, 23.641-23.659, 23.672, 23.675, 23.681, 23.685-23.689, 23.693, 23.701, 23.775, 23.783, 23.785, 23.787, 23.841-23.843, 23.963-23.965, 23.979, 25.303, 25.305, 25.601, 25.603, 25.613, 25.621-25.631, 25.651-25.657, 25.672, 25.675, 25.681, 25.685, 25.689, 23.693, 25.701, 25.775, 25.783, 25.785, 25.787, 25.789, 25.841-25.843, 25.875, 25.963-25.965, 25.979
5.3 Materials, processes, corrosion prevention, nondestructive evaluation, and repair.		
5.3.1	JSSG-2006: 3.2.19, 3.2.20, 3.2.21, 3.2.28, 3.10.10, 3.11.6, 4.2.19, 4.2.20, 4.2.21, 4.2.28, 4.10.10, 4.11.6, AR-56: 3.1.2, 3.7.7	23.601-23.619, 25.601-25.619

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
5.3.2	JSSG-2006: 3.10.9, 3.10.10, 4.10.9, 4.10.10	TBD: Refer to technical point of contact for this discipline (listed in section A.20).
5.3.3	JSSG-2006: 3.2.19, 3.2.20, 3.2.21, 3.2.28, 3.10.10, 3.11.6, 4.2.19, 4.2.20, 4.2.21, 4.2.28, 4.10.10, 4.11.6	23.601-23.619, 25.601- 25.619
5.4 Damage tolerance and durability (fatigue).		
5.4.1	JSSG-2006: 3.11, 3.12, 3.13, 4.11, 4.12, 4.13, AR-56: 3.1.1.10, 3.1.9, 3.18, AR-89: 3.12	23.571-23.575, 25.571
5.4.2	JSSG-2006: 3.11, 3.12, 3.13, 4.11, 4.12, 4.13, AR-56: 3.1.1.10, 3.1.9, 3.18, AR-89: 3.12, AR-56: 3.1.1.10, 3.1.9, 3.18, AR-89: 3.12	23.571-23.575, 23.627, 25.571
5.4.3	JSSG-2006: 3.11, 3.12, 3.13, 4.11, 4.12, 4.13, AR-56: 3.1.1.10, 3.1.9, 3.18, AR-89: 3.12	23.571-23.575, 23.627, 25.571
5.4.4	JSSG-2006: 3.11, 3.12, 3.13, 4.11, 4.12, 4.13, AR-56: 3.1.1.10, 3.1.9, 3.18, AR-89: 3.12	23.571-23.575, 23.627, 25.571
5.5 Flight operating limits.		
5.5.1	JSSG-2006: 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.10.7, 3.10.8, 3.11, 3.12, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.10.7, 4.10.8, 4.11, 4.12, AR-56: 3.7.9	23.1501-23.1589, 25.1501- 25.1587
5.5.2	JSSG-2006: 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.10.7, 3.10.8, 3.11, 3.12, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.10.7, 4.10.8, 4.11, 4.12, AR-56: 3.7.9	23.1501-23.1589, 25.1501- 25.1587



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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
5.6 Functionality.		
5.6.1	JSSG-2006: 3.2.18, 3.3.2, 3.3.15, 3.3.17, 3.10, 4.2.18, 4.3.2, 4.3.15, 4.3.17, 4.10	23.655, 25.655
5.6.2	JSSG-2006: 3.2.18, 3.3.2, 3.3.15, 3.3.17, 3.10, 4.2.18, 4.3.2, 4.3.15, 4.3.17, 4.10	23.365, 23.841, 23.951- 23.979, 25.841, 25.951- 25.981
5.7 Structural dynamics.		
5.7.1	JSSG-2006: 3.7, 4.7 AR-56: 3.6.2, AR-89: 3.14, 3.15	23.251, 23.253, 23.629, 25.251, 25.253, 25.629
5.7.2	JSSG-2006: 3.7, 4.7 AR-56: 3.6.2, AR-89: 3.14, 3.15	23.251, 23.253, 23.629, 25.251, 25.253, 25.629
5.7.3	JSSG-2006: 3.7, 4.7 AR-56: 3.6.2, AR-89: 3.14, 3.15	23.251, 23.253, 23.629, 25.251, 25.253, 25.629
5.7.4	JSSG-2006: 3.7, 4.7 AR-56: 3.6.2, AR-89: 3.14, 3.15	23.251, 23.253, 23.629, 25.251, 25.253, 25.629
5.7.5	JSSG-2006: 3.7, 4.7 AR-56: 3.4.2.3	No applicable reference available.
5.7.6	JSSG-2006: 3.4.2.7.b, 4.4.2	23.471-23.511, 25.471- 25.511
5.7.7	JSSG-2006: 3.7, 4.7 AR-56: 3.6.2 AR-89: 3.14, 3.15	23.251, 23.253, 23.629, 25.251, 25.253, 25.629
5.7.8	JSSG-2006: 3.2, 3.3, 3.4, 3.5, 3.6, 4.2, 4.3, 4.4, 4.5, 4.6 AR-56: 3.7.9	23.1301-23.1337, 25.1301- 25.1337
5.7.9	AR-56: 3.6.3 AR-89: 3.14, 3.15	27.241, 27.663, 29.241, 29.663
5.7.10	AR-56: 3.6.3 AR-89: 3.14, 3.15	27.251, 27.931, 29.251, 29.931
5.7.11	TBD: Refer to technical point of contact for this discipline (listed in section A.20).	TBD: Refer to technical point of contact for this discipline (listed in section A.20).

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
5.8 Mass properties interface.		
5.8.1	JSSG-2006: 3.2.4, 3.2.5, 3.2.6, 4.2.4, 4.2.5, 4.2.6 AR-56: 3.1.5	23.23, 23.25, 23.29, 23.31, 25.23, 25.25, 25.27, 25.29, 25.31
5.8.2	JSSG-2006: 3.2.4, 3.2.5, 3.2.6, 4.2.4, 4.2.5, 4.2.6 AR-56: 3.1.5	23.23, 23.25, 23.29, 23.31, 25.23, 25.25, 25.27, 25.29, 25.31
5.8.3	JSSG-2006: 3.2.4, 3.2.5, 3.2.6, 4.2.4, 4.2.5, 4.2.6 AR-56: 3.1.5	23.23, 23.25, 23.29, 23.31, 25.23, 25.25, 25.27, 25.29, 25.31
5.8.4	JSSG-2006: 3.2.4, 3.2.5, 3.2.6, 4.2.4, 4.2.5, 4.2.6 AR-56: 3.1.5	23.23, 23.25, 23.29, 23.31, 25.23, 25.25, 25.27, 25.29, 25.31
5.8.5	JSSG-2006: 3.2.4, 3.2.5, 3.2.6, 4.2.4, 4.2.5, 4.2.6 AR-56: 3.1.5	23.23, 23.25, 23.29, 23.31, 25.23, 25.25, 25.27, 25.29, 25.31
5.8.6	JSSG-2006: 3.2.4, 3.2.5, 3.2.6, 4.2.4, 4.2.5, 4.2.6 AR-56: 3.1.5	23.23, 23.25, 23.29, 23.31, 23.1501-23.1589, 25.23, 25.25, 25.27, 25.29, 25.31, 25.1501-25.1587
5.8.7	JSSG-2006: 3.2.4, 3.2.5, 3.2.6, 4.2.4, 4.2.5, 4.2.6 AR-56: 3.1.5	23.23, 23.25, 23.29, 23.31, 23.1501-23.1589, 25.23, 25.25, 25.27, 25.29, 25.31, 25.1501-25.1587
5.9 Stores/armament interface.		
5.9.1	JSSG-2006: 3.4, 3.5, 3.6, 3.7, 3.10, 3.11, 3.12, 4.4, 4.5, 4.6, 4.7, 4.10, 4.11, 4.12 AR-56: 3.6, AR-89: 3.14, 3.15	No applicable reference available.
5.9.2	JSSG-2006: 3.4, 3.5, 3.6, 3.7, 3.10, 3.11, 3.12, 4.4, 4.5, 4.6, 4.7, 4.10, 4.11, 4.12 AR-56: 3.6, AR-89: 3.14, 3.15	No applicable reference available.
5.9.3	JSSG-2006: 3.4, 3.5, 3.6, 3.7, 3.10, 3.11, 3.12, 4.4, 4.5, 4.6, 4.7, 4.10, 4.11, 4.12 AR-56: 3.6, AR-89: 3.14, 3.15	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
5.10 Structural maintenance manuals (T.O.'s)		
5.10.1	JSSG-2006: 3.13, 3.16, 4.13, 4.16	23.1501-23.1589, 25.1501-25.1587
5.11 Rotary wing air vehicles		
5.11.1	AR-56: 3.1.1.10, 3.1.9, 3.18, AR-89: 3.5, 3.6, 3.7, 3.9, 3.11	Refer to technical point of contact for this discipline (listed in section A.20).
5.11.2	AR-56: 3.6.5.3	Refer to technical point of contact for this discipline (listed in section A.20).

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**A.6. Flight Technologies**

<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6. Flight Technologies	JSSG-2001 Air Vehicle, JSSG-2008 Vehicle Control and Management Systems	NOTE: As each section applies, Flight Technology must be checked for a variety of FARs and ACs. Due to the complexity of different design configurations, each section in Subpart C of FAR 23/25 should be consulted for applicability.
6.1 Stability and control.	JSSG-2001 Air Vehicle Specification and Appendix C	23.21-23.3, 23.171-23.181,
6.1.1 Control power.		
6.1.1. a	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.1, C.4.1, C.3.1.12 thru C.3.1.12.6, C.4.1.12	25.101-25.125
6.1.1. b	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.1, C.4.1, C.3.1.4, C.4.1.4, C.3.15.2, C.4.15.2, C.3.15.4, C.4.15.4	25.101-25.125
6.1.1. c	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.12 thru C.3.12.8, C.4.12	25.101-25.125
6.1.1. d	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.1, C.4.1, C.3.1.4, C.4.1.4	25.101-25.125
6.1.1. e	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.1.10, C.4.1.10, C.3.1.12.3, C.4.1.12, C.3.1, C.4.1	25.101-25.125
6.1.1. f	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.1.11.1, C.4.1.11, C.3.15.3, C.4.15.3	25.101-25.125
6.1.1. g	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.6.2, C.4.6, C.3.12 thru C.3.12.8, C.4.12	25.101-25.125

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.1.1. h	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.1, C.4.1, C.3.1.13, C.4.1.13, C.3.13.5, C.4.13.5	25.101-25.125
6.1.1. i	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.1.12.4, C.3.1.12.6, C.4.1.12, C.3.6, C.3.6.1, C.4.6, C.3.1.10, C.4.1.10, C.3.9, C.4.9, C.3.12, C.4.12, C.3.13.5, C.4.13.5	25.101-25.125
6.1.1. j	JSSG-2001: 3.3.11.1, 3.3.11.1.1.3; and Appendix C: C.3.1, C.4.1, C.3.1.13, C.4.1.13, C.3.1.7.2, C.4.1.7, C.3.13.5, C.4.13.5, C.3.6, C.4.6	25.101-25.125
6.1.1. k	JSSG-2001: 3.3.11.1, 3.3.11.1.1.3; and Appendix C: C.3.1, C.4.1, C.3.1.13, C.4.1.13, C.3.1.7.2, C.4.1.7, C.3.13.5, C.4.13.5, C.3.6, C.4.6	25.101-25.125
6.1.1. l	JSSG-2001: 3.3.11.1, 3.3.11.1.1.3; and Appendix C: C.3.1, C.4.1, C.3.1.13, C.4.1.13, C.3.1.7.2, C.4.1.7, C.3.13.5, C.4.13.5, C.3.6, C.4.6	25.101-25.125
6.1.2 Stability characteristics and transients.		
6.1.2.1	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3	25.171-25.181
6.1.2.2	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	25.171-25.181
6.1.2.3	TBD: Refer to technical point of contact for this discipline (listed in section A.20).	TBD: Refer to technical point of contact for this discipline (listed in section A.20).
6.1.3 Flying, handling, and ride qualities.		
6.1.3.1	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.361, 25.341, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.1.3.2	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.3.a	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.3.b	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.3.c	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.4	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.5	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.5.1	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.5.2	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.6.a	JSSG-2001: 3.3.11.1 thru 3.3.11.1.1.1; and Appendix C	23.231-23.329, 25.231-25.239
6.1.3.6.b	JSSG-2001: 3.3.11.1 thru 3.3.11.1.1.1; and Appendix C	23.231-23.329, 25.231-25.239
6.1.3.6.c	JSSG-2001: 3.3.11.1 thru 3.3.11.1.1.1; and Appendix C	23.231-23.329, 25.231-25.239
6.1.3.6.d	JSSG-2001: 3.3.11.1 thru 3.3.11.1.1.1; and Appendix C	23.231-23.329, 25.231-25.239
6.1.3.6.e	JSSG-2001: 3.3.11.1 thru 3.3.11.1.1.1; and Appendix C	23.231-23.329, 25.231-25.239
6.1.3.7.a	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.13 thru C.3.13.6.4, C.4.13 thru C.4.13.6	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.1.3.7.b	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.1, C.4.1, C.3.7, C.4.7, C.3.13 thru C.3.13.6.4, C.4.13 thru C.4.13.6	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.7.c	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.2.3 thru C.3.2.3.3, C.4.2, C.3.13.4 thru C.3.13.4.3, C.4.13.4	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.7.d	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.7.e	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.13.4 thru C.3.13.4.3, C.4.13.4	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.7.f	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C: C.3.3, C.4.3	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.7.g	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.7.h	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.7.i	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.7.j	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.8	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.9.a	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.9.b	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.1.3.9.c	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.9.d	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.9.e	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.9.f	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.10	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.3.11	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.4 Mission evaluations including flight path guidance.		
6.1.4.1	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.4.2	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.4.3	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.5 Other effects.		
6.1.5.1	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.5.2	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.5.3	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529



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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.1.5.4	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.5.5	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.5.6	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.5.7	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.5.8	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.5.9	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.5.10	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.5.11	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.5.12	TBD: Refer to NAVAIR technical point of contact for this discipline (listed in section A.20).	Not Applicable
6.1.5.13	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.5.14	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.6 Envelopes.		
6.1.6.1	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.6.2	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.1.6.3	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.6.4.a	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.6.4.b	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.6.4.c	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.6.4.d	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.1.7 Store carriage and separation.		
6.1.7.1	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	No applicable reference available.
6.1.7.2	JSSG-2001: 3.3.11.1 thru 3.3.11.1.3; and Appendix C	No applicable reference available.
6.1.7.3	JSSG-2001: 3.4.2.1, JSSG-2008: 3.1.5.3, 3.1.5.8, 3.2.1.2	No applicable reference available.
6.2 Vehicle control functions (VCF).		
6.2.1 VCF architecture design.		
6.2.1.1	JSSG-2008: 3.0 thru 3.8, 4.0 thru 4.8	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.1.2	JSSG-2008: 3.1.7 thru 3.1.7.3, 4.1.7 thru 4.1.7.3	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.1.3	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.11 thru 3.1.12.1, 4.1.11 thru 4.1.12.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.1.4	JSSG-2008: 3.1.1 thru 3.1.4, 4.1.1 thru 4.1.4	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.1.5	JSSG-2008: 3.1.9, 4.1.9	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.1.6	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.11 thru 3.1.11.2, 4.1.11 thru 4.1.11.2	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2 Basic VCF.		
6.2.2.1	JSSG-2008: 3.1.1, 4.1.1, 3.1.11.10, 4.1.11.10, 3.1.11.11 thru 3.1.11.11.4, 4.1.11.11 thru 4.1.11.11.4, 3.2.2 thru 3.2.2.5.4, 4.2.2 thru 4.2.2.5.4	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.2	JSSG-2008: 3.0, 4.0, 3.2.2.5.1.1, 4.2.2.5.1.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.3	JSSG-2008: 3.1.5.3, 4.1.5.3, 3.2.1 thru 3.2.1.4, 4.2.1 thru 4.2.1.4, 3.2.2.5.4, 4.2.2.5.4	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.4	JSSG-2008: 3.2.1 thru 3.2.1.4, 4.2.1 thru 4.2.1.4, 3.2.2.5 thru 3.2.2.5.1.1, 4.2.2.5 thru 4.2.2.5.1.1, 3.2.3, 4.2.3	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.5	JSSG-2008: 3.1.5.6 thru 3.1.5.7, 4.1.5.6 thru 4.1.5.7, 3.2.2.1, 4.2.2.1, 3.2.1, 4.2.1, 3.2.1.1, 4.2.1.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.6	JSSG-2008: 3.2.2.3, 4.2.2.3, 3.2.2.5.1, 4.2.2.5.1, 3.2.2.5.1.1, 4.2.2.5.1.1, 3.2.2.5.1.3, 4.2.2.5.1.3	23.779, 25.779, 23.141- 23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.2.7	JSSG-2008: 3.2.2.5.4 thru 3.2.2.5.4.5, 4.2.2.5.4 thru 4.2.2.5.4.5	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.8	JSSG-2008: 3.2.2.5.1.3, 4.2.2.5.1.3	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.9	JSSG-2008: 3.2.2.5.1.3, 4.2.2.5.1.3	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.10	JSSG-2008: 3.1.8, 4.1.8, 3.2.1.3, 4.2.1.3, 3.2.1.4, 4.2.1.4, 3.2.1, 4.2.1, 3.2.2.5.4.5, 4.2.2.5.4.5, 3.1.12 thru 3.1.12.1, 4.1.12 thru 4.1.12.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.11	JSSG-2008: 3.1.5.3, 3.1.5.2, 3.1.5.4, 3.1.9, 3.1.11.1, 3.1.10, 3.1.11.1.1, 3.1.13 to 3.1.13.2, 3.1.16, 3.2.2.5.4.1, 3.2.4 thru 3.2.4.6, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.12	JSSG-2008: 3.1.2.1, 4.1.2.1, 3.1.11.1, 4.1.11.1, 3.1.12 thru 3.1.12.1, 4.1.12 thru 4.1.12.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.13	JSSG-2008: 3.0, 4.0, 3.1.7.2, 4.1.7.2, 3.1.11.11, 4.1.11.11, 3.1.11.11.1, 4.1.11.11.1, 3.1.12.1, 4.1.12.1, 3.1.14.4, 4.1.14.4	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.14	JSSG-2008: 3.1.11.1, 3.1.11.1.1, 3.1, 3.1.2, 3.1.5.5, 3.1.5.6, 3.1.7.3, 3.1.9, 3.1.11.4, 3.1.11.7, 3.1.12, 3.1.13.2, 3.1.14.4, 3.1.17, 3.2.2.2 thru 3.2.2.2.13, 3.3.3, 3.4.2, 3.5.7 and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.2.15	JSSG-2008: 3.1.14 thru 3.1.14.9, 4.1.14 thru 4.1.14.9, 3.1.15 thru 3.1.18, 4.1.15 thru 4.1.18, 3.2.3 thru 3.2.3.3, 4.2.3 thru 4.2.3.3, 3.4 thru 3.5.2, 4.4 thru 4.5.2	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.16	JSSG-2008: 3.0, 4.0, 3.1.11.11, 4.1.11.11, 3.1.11.11.1, 4.1.11.11.1, 3.1.14, 4.1.14, 3.2.2.1, 4.2.2.1, 3.5.7, 4.5.7	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.17	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.7.2, 4.1.7.2, 3.1.7.3, 4.1.7.3, 3.1.11.11, 4.1.11.11, 3.1.13, 4.1.13, 3.1.14, 4.1.14, 3.1.14.5, 4.1.14.5, 3.2.3, 4.2.3, 3.2.3.3, 4.2.3.3, 3.4.4, 4.4.4, 3.5.7, 4.5.7	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.18	JSSG-2008: 3.1, 3.1.5.2, 3.1.5.5, 3.1.5.7, 3.1.8, 3.1.11.6, 3.1.11.8, 3.1.13, 3.1.14.8, 3.1.16, 3.1.17, 3.1.18, 3.2.2.1, 3.2.2.4, 3.2.2.5.2, 3.2.2.5.4 thru 3.2.2.5.4.5, 3.2.2.6, 3.3.1, 3.3.4, 3.3.5, 3.3.7, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.19	JSSG-2008: 3.1, 3.1.2, 3.1.2.1, 3.1.3, 3.1.5, 3.1.5.1, 3.1.5.2, 3.1.5.4, 3.1.5.5, 3.1.5.7, 3.1.5.8, 3.1.7, 3.1.7.2, 3.1.7.3, 3.1.9, 3.1.10, 3.1.11, 3.1.11.2, 3.1.11.4, 3.1.11.5, 3.1.11.6, 3.1.11.9, 3.1.11.10, 3.1.11.11.2, 3.1.11.11.3, 3.1.12, 3.1.12.1, 3.1.13.1, 3.1.13.2, 3.1.14.2.2, 3.1.14.2.4, 3.2.2.1, 3.2.2.2(all), 3.2.2.5(all), 3.3 thru 3.3.4, 3.3.6, 3.3.6.2, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529

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**APPENDIX**

<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.2.20	JSSG-2008: 3.0, 3.1, 3.1.5, 3.1.5.1, 3.1.5.6, 3.1.5.9, 3.1.7, 3.1.7.3, 3.1.11.11.3, 3.2.1.1, 3.2.2.1, 3.2.2.5.4, 3.2.2.5.4.2, 3.2.2.5.4.3, 3.2.2.5.4.4, 3.2.2.6, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.21	JSSG-2008: 3.1, 4.1, 3.1.5.2, 4.1.5.2, 3.1.5.7, 4.1.5.7, 3.1.7.2, 4.1.7.2, 3.1.11.6, 4.1.11.6, 3.1.14.7, 4.1.14.7, 3.2.2.5.4, 4.2.2.5.4	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.22	JSSG-2008: 3.0, 3.1, 3.1.1, 3.1.2, 3.1.2.1, 3.1.4, 3.1.5.5, 3.1.5.7, 3.1.7, 3.1.7.2, 3.1.9, 3.1.10, 3.1.11, 3.1.11.2, 3.1.11.5, 3.1.11.6, 3.1.11.7, 3.1.12, 3.1.12.1, 3.1.13.1, 3.1.17, 3.2.2.4, 3.2.2.5, 3.2.2.5.1.4, 3.2.2.5.4, 3.2.5.2, 3.3.1, 3.3.2, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.23	JSSG-2008: 3.0, 3.1, 3.1.5, 3.1.5.7, 3.1.5.8, 3.1.5.9, 3.1.7.2, 3.1.7.3, 3.1.11.2, 3.1.11.10, 3.1.11.11.1, 3.1.17, 3.2.2.1, 3.2.2.2.9, 3.2.2.5.4, 3.2.2.5.4.2, 3.2.2.5.4.3, 3.2.2.5.4.4, 3.2.2.6, 3.3.2.1, 3.3.4, 3.5, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.24	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.3, 4.1.5.3, 3.1.7, 4.1.7, 3.1.8, 4.1.8, 3.1.12, 4.1.12, 3.1.13.2, 4.1.13.2, 3.2.2.5, 4.2.2.5, 3.2.2.5.1.2, 4.2.2.5.1.2, 3.2.2.5.1.3, 4.2.2.5.1.3, 3.2.2.5.1.4, 4.2.2.5.1.4, 3.2.2.5.4.1, 4.2.2.5.4.1, 3.2.2.6, 4.2.2.6	23.345, 23.397, 23.672, 23.675, 23.677, 23.679, 25.345, 25.397, 25.672, 25.675, 25.677, 25.679
6.2.2.25	JSSG-2008: 3.0, 4.0, 3.1(all), 4.1(all), 3.2(all), 4.2(all), 3.3(all), 4.3(all), 3.4(all), 4.4(all), 3.5(all), 4.5(all)	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.2.26	JSSG-2008: 3.0, 3.1, 3.1.5.2, 3.1.5.4, 3.1.7(all), 3.1.10, 3.1.11, 3.1.11.1, 3.1.11.1.1, 3.1.11.10, 3.1.14.7, 3.2, 3.2.2.3, 3.2.2.5.1, 3.2.2.5.1.2, 3.2.2.5.1.4, 3.2.2.5.4, 3.2.2.5.4.1, 3.2.2.5.4.3, 3.2.2.5.4.4, 3.2.2.5.4.5, 3.2.2.6, 3.5.3, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.27	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.13, 4.1.13, 3.1.13.1, 4.1.13.1, 3.1.13.3, 4.1.13.3, 3.1.14.7, 4.1.14.7, 3.2.2.2.2, 4.2.2.2.2, 3.2.2.5.1.3, 4.2.2.5.1.3, 3.2.2.6, 4.2.2.6	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.28	JSSG-2008: 3.0, 3.1, 3.1.5.2, 3.1.5.8, 3.1.5.9, 3.1.7.2, 3.1.7.3, 3.1.11, 3.1.11.2, 3.1.13.1, 3.1.13.3, 3.1.14, 3.1.14.7, 3.2.2.2.4, 3.2.2.2.5, 3.2.2.2.9, 3.2.2.2.11, 3.2.2.4, 3.2.2.5.1, 3.2.2.5.1.1 thru 3.2.2.5.1.4, 3.2.2.5.4.1, 3.2.2.6, 3.3.2.1, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.29	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.7.3, 4.1.7.3, 3.1.11.2, 4.1.11.2, 3.2.2.5.4.3, 4.2.2.5.4.3, 3.2.2.5.4.4, 4.2.2.5.4.4	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.30	JSSG-2008: 3.0, 3.1, 3.1.5.2, 3.1.5.4, 3.1.5.5, 3.1.7.2, 3.1.7.3, 3.1.11, 3.1.11.5, 3.1.12, 3.1.12.1, 3.1.13.2, 3.1.14, 3.2.2.1, 3.2.2.2.1, 3.2.2.2.2, 3.2.2.2.6, 3.2.2.2.12, 3.2.2.5.4, 3.2.2.5.4.3, 3.2.2.6, 3.3.1, 3.3.2, 3.3.2.1, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.2.31	JSSG-2008: 3.0, 3.1, 3.1.2, 3.1.5, 3.1.5.1, 3.1.5.2, 3.1.7, 3.1.7.3, 3.1.11.2, 3.1.11.10, 3.1.14.7, 3.1.17, 3.2.2.2.9, 3.2.2.5, 3.2.2.5.1.1, 3.2.2.5.1.2, 3.2.2.5.4, 3.2.2.5.4.3, 3.2.2.5.4.5, 3.2.2.6, 3.2.4.6, 3.2.5.1, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.32	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.11.10, 4.1.11.10, 3.1.13.4, 4.1.13.4, 3.1.17, 4.1.17, 3.2.2.2.7, 4.2.2.2.7, 3.2.2.5.1.2, 4.2.2.5.1.2, 3.2.2.5.1.4, 4.2.2.5.1.4	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.33	JSSG-2008: 3.0, 3.1, 3.1.2.1, 3.1.5, 3.1.5.6, 3.1.7.2, 3.1.11, 3.1.13, 3.1.15, 3.1.17, 3.2.2.2(all), 3.2.2.5, 3.2.2.5.1.1, 3.2.2.5.2, 3.2.2.5.4.3, 3.2.2.5.4.4, 3.3.4, 3.3.6.2, 3.5.7, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.34	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5, 4.1.5, 3.1.5.7, 4.1.5.7, 3.1.7, 4.1.7, 3.1.7.2, 4.1.7.2, 3.1.17, 4.1.17, 3.2.1.1, 4.2.1.1, 3.2.1.2, 4.2.1.2, 3.2.2.5, 4.2.2.5, 3.3.2.5.4.2, 4.3.2.5.4.2, 3.2.2.5.4.4, 4.2.2.5.4.4	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.35	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.14.6, 4.1.14.6, 3.1.18, 4.1.18, 3.2.2.2(all), 4.2.2.2(all), 3.3, 4.3, 3.3.1, 4.3.1, 3.3.2, 4.3.2, 3.3.2.1, 4.3.2.1, 3.3.2.2, 4.3.2.2, 3.3.2.3, 4.3.2.3, 3.3.4, 4.3.4	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529



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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.2.36	JSSG-2008: 3.0, 3.1, 3.1.12(all), 3.1.13, 3.1.13.1, 3.1.14.7, 3.2.2.2(all), 3.2.2.5, 3.2.2.5.1(all), 3.2.2.5.2, 3.2.2.5.3, 3.3.6.2, 3.7.1, 3.7.1.1, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.37	JSSG-2008: 3.0, 3.1, 3.1.2, 3.1.5(all), 3.1.7(all), 3.1.8(all), 3.1.11(all), 3.1.12(all), 3.1.13(all), 3.1.14.4, 3.2.2.2(all), 3.2.2.4, 3.2.2.5(all), 3.2.2.6, 3.3(all), 3.2.4(all), and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.38	JSSG-2008: 3.0 thru 3.3.8, 4.0 thru 4.3.8	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.39	JSSG-2008: 3.0, 3.1, 3.1.5.2, 3.1.5.8, 3.1.5.9, 3.1.7.2, 3.1.7.3, 3.1.11, 3.1.11.2, 3.1.13.1, 3.1.13.3, 3.1.14, 3.1.14.7, 3.2.2.2.4, 3.2.2.2.5, 3.2.2.2.9, 3.2.2.2.11, 3.2.2.4, 3.2.2.5.1, 3.2.2.5.1.1 thru 3.2.2.5.1.4, 3.2.2.5.4.1, 3.2.2.6, 3.3.2.1, 3.3.6.2, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.40	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.1, 4.1.5.1, 3.1.5.5, 4.1.5.5, 3.1.5.6, 4.1.5.6, 3.1.7.3, 4.1.7.3, 3.1.17, 4.1.17, 3.3.2.1, 4.3.2.1, 3.3.4, 4.3.4	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.2.41	JSSG-2008: 3.0, 3.1, 3.1.2, 3.1.5, 3.1.5.1, 3.1.5.2, 3.1.7, 3.1.7.3, 3.1.11.2, 3.1.11.10, 3.1.14.7, 3.1.17, 3.2.2.1, 3.2.2.2(all), 3.2.2.5, 3.2.2.5.1.1, 3.2.2.5.1.2, 3.2.2.5.4, 3.2.2.5.4.3, 3.2.2.5.4.5, 3.2.2.6, 3.2.4.6, 3.2.5.1, 3.3.6.2, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.42	JSSG-2008: 3.0, 3.1, 3.1.5, 3.1.5.7, 3.1.5.8, 3.1.5.9, 3.1.9, 3.1.14(all), 3.2.1.3, 3.2.1.2, 3.2.2.2(all), 3.2.2.5, 3.2.2.5.4(all), 3.2.2.6, 3.3(all), and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.43	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.6, 4.1.5.6, 3.1.5.7, 4.1.5.7, 3.2.1(all), 4.2.1(all), 3.2.2.1, 4.2.2.1, 3.2.2.2.1, 4.2.2.2.1, 3.2.2.5.4.4, 4.2.2.5.4.4	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.44.a	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.6, 4.1.5.6, 3.1.9, 4.1.9, 3.1.11, 4.1.11, 3.1.11.1, 4.1.11.1, 3.1.11.1.1, 4.1.11.1.1, 3.1.12, 4.1.12, 3.2.2, 4.2.2, 3.2.2.1, 4.2.2.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.44.b	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.6, 4.1.5.6, 3.1.9, 4.1.9, 3.1.11, 4.1.11, 3.1.11.1, 4.1.11.1, 3.1.11.1.1, 4.1.11.1.1, 3.1.12, 4.1.12, 3.2.2, 4.2.2, 3.2.2.1, 4.2.2.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.44.c	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.6, 4.1.5.6, 3.1.9, 4.1.9, 3.2.2.1, 4.2.2.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.44.d	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.6, 4.1.5.6, 3.2.2.1, 4.2.2.1	25.671

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.2.45	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.6, 4.1.5.6, 3.1.14.1, 4.1.14.1, 3.1.14.3, 4.1.14.3, 3.2.2.1, 4.2.2.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.46	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.6, 4.1.5.6, 3.1.5.7, 4.1.5.7, 3.1.9, 4.1.9, 3.1.11, 4.1.11, 3.1.11.1, 4.1.11.1, 3.1.11.1.1, 4.1.11.1.1, 3.1.12, 4.1.12, 3.1.14.1, 4.1.14.1, 3.1.14.3, 4.1.14.3, 3.2.2.1, 4.2.2.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.47	JSSG-2008: 3.1, 4.1, 3.1.8, 4.1.8, 3.1.7.3, 4.1.7.3, 3.1.11, 4.1.11, 3.1.11.7, 4.1.11.7, 3.1.11.9, 4.1.11.9, 3.1.13, 4.1.13, 3.2.2.2, 4.2.2.2, 3.2.2.5.1.2, 4.2.2.5.1.2, 3.2.2.5.3, 4.2.2.5.3, 3.3, 4.3, 3.3.1, 4.3.1, 3.3.2.3, 4.3.2.3, 3.3.3, 4.3.3	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.48	JSSG-2008: 3.1.8, 4.1.8, 3.1.14.6, 4.1.14.6, 3.1.16, 4.1.16, 3.2, 4.2, 3.3.1, 4.3.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.49	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.2, 4.1.2, 3.1.3, 4.1.3, 3.1.7.3, 4.1.7.3, 3.1.8, 4.1.8, 3.1.9, 4.1.9, 3.1.11.1, 4.1.11.1, 3.1.12, 4.1.12, 3.1.13.2, 4.1.13.2, 3.1.14.4, 4.1.14.4, 3.1.17, 4.1.17	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.50	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.2, 4.1.2, 3.1.5.3, 4.1.5.3, 3.1.5.5, 4.1.5.5, 3.1.7.3, 4.1.7.3, 3.1.11, 4.1.11, 3.1.13, 4.1.13, 3.1.13.3, 4.1.13.3, 3.1.17, 4.1.17, 3.2.2.2.9, 4.2.2.2.9, 3.2.2.5.1.1, 4.2.2.5.1.1, 3.2.2.5.4.5, 4.2.2.5.4.5, 3.3.1, 4.3.1	25.901

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.2.51	JSSG-2008: 3.1.11, 4.1.11, 3.1.14.6, 4.1.14.6, 3.1.16, 4.1.16, 3.2, 4.2, 3.3.1, 4.3.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.52.a	JSSG-2008: 3.1.7(all), 4.1.7(all), 3.1.11(all), 4.1.11(all), 3.1.12(all), 4.1.12(all), 3.1.13(all), 4.1.13(all), 3.1.14(all), 4.1.14(all), 3.2.2.4, 4.2.2.4, 3.3(all), 4.4(all)	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.52.b	JSSG-2008: 3.1.7(all), 4.1.7(all), 3.1.11(all), 4.1.11(all), 3.1.12(all), 4.1.12(all), 3.1.13(all), 4.1.13(all), 3.1.14(all), 4.1.14(all), 3.2.2.4, 4.2.2.4, 3.3(all), 4.4(all)	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.52.c	JSSG-2008: 3.1.7(all), 4.1.7(all), 3.1.11(all), 4.1.11(all), 3.1.12(all), 4.1.12(all), 3.1.13(all), 4.1.13(all), 3.1.14(all), 4.1.14(all), 3.2.2.4, 4.2.2.4, 3.3(all), 4.4(all)	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.52.d	JSSG-2008: 3.1.7(all), 4.1.7(all), 3.1.11(all), 4.1.11(all), 3.1.12(all), 4.1.12(all), 3.1.13(all), 4.1.13(all), 3.1.14(all), 4.1.14(all), 3.2.2.4, 4.2.2.4, 3.3(all), 4.4(all)	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.52.e	JSSG-2008: 3.1.7(all), 4.1.7(all), 3.1.11(all), 4.1.11(all), 3.1.12(all), 4.1.12(all), 3.1.13(all), 4.1.13(all), 3.1.14(all), 4.1.14(all), 3.2.2.4, 4.2.2.4, 3.3(all), 4.4(all)	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.2.53	JSSG-2008: 3.1.14(all), 4.1.14(all), 3.4(all), 4.4(all), 3.5(all), 4.5(all)	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321- 25.459, 23.1501-23.1529, 25.1501-25.1529

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CERTIFICATION CRITERIA	SUPPORT DOCUMENTATION	FEDERAL AVIATION REGULATIONS
6.2.2.54	ADS-51-HDBK, ADS-33E-PRF, AMCP 706-203  Refer to Army Aviation technical point of contact for this discipline for specific guidance (listed in section A.20).	TBD: Refer to technical point of contact for this discipline (listed in section A.20).
6.2.2.55	ADS-51-HDBK, ADS-33E-PRF, AMCP 706-203  Refer to Army Aviation technical point of contact for this discipline for specific guidance (listed in section A.20).	TBD: Refer to technical point of contact for this discipline (listed in section A.20).
6.2.2.56	ADS-51-HDBK, ADS-33E-PRF, AMCP 706-203  Refer to Army Aviation technical point of contact for this discipline for specific guidance (listed in section A.20).	TBD: Refer to technical point of contact for this discipline (listed in section A.20).
6.2.2.57	ADS-51-HDBK, ADS-33E-PRF, AMCP 706-203  Refer to Army Aviation technical point of contact for this discipline for specific guidance (listed in section A.20).	TBD: Refer to technical point of contact for this discipline (listed in section A.20).
6.2.3 VCF power source criteria.		
6.2.3.1	JSSG-2008: 3.0, 3.1, 3.1.2, 3.1.2.1, 3.1.3, 3.1.7.2, 3.1.7.3, 3.1.11, 3.1.11.11.3, 3.1.12, 3.1.12.1, 3.1.14.4, 3.1.14.9, 3.2.1.3, 3.2.2.2.1, 3.2.2.2.5, 3.2.3.1, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.3.2	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.6, 4.1.5.6, 3.1.7.2, 4.1.7.2, 3.1.11.11.3, 4.1.11.11.3, 3.2.2.2.1, 4.2.2.2.1, 3.3 thru 3.3.4, 4.3 thru 4.3.4, 3.3.6, 4.3.6, 3.3.6.2, 4.3.6.2	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.3.3	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.6, 4.1.5.6, 3.1.7.2, 4.1.7.2, 3.1.11.11.3, 4.1.11.11.3, 3.2.2.2.1, 4.2.2.2.1, 3.2.2.2.5, 4.2.2.2.5	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.3.4	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.2, 4.1.5.2, 3.1.5.6, 4.1.5.6, 3.1.7.2, 4.1.7.2, 3.1.10, 4.1.10, 3.1.11.11.3, 4.1.11.11.3, 3.1.13(all), 4.1.13(all), 3.2.2.2.1, 4.2.2.2.1, 3.2.2.2.5, 4.2.2.2.5	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.3.5	JSSG-2008: 3.0, 3.1, 3.1.2, 3.1.2.1, 3.1.3, 3.1.7.2, 3.1.7.3, 3.1.11.11.3, 3.1.12.1, 3.1.13(all), 3.1.14.4, 3.1.14.9, 3.2.1.3, 3.2.2.2, 3.2.2.2.1, 3.2.2.2.5, 3.3 thru 3.3.4, 3.3.6, 3.3.6.2, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.3.6	JSSG-2008: 3.0, 3.1, 3.1.2, 3.1.5.2, 3.1.5.4, 3.1.7.2, 3.1.10, 3.1.11, 3.1.11.11.2, 3.1.13(all), 3.2.2.2, 3.2.2.2.2, 3.2.2.2.5, 3.3 thru 3.3.4, 3.3.6, 3.3.6.2, and associated section 4 paragraphs	23.1351-23.1367, 25.1351-25.1363, 23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.3.7	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.2, 4.1.2, 3.1.2.1, 4.1.2.1, 3.1.3, 4.1.3, 3.1.7.2, 4.1.7.2, 3.1.11, 4.1.11, 3.1.11.11.2, 4.1.11.11.2, 3.1.12, 4.1.12, 3.1.12.1, 4.1.12.1, 3.2.2.2.2, 4.2.2.2.2, 3.2.2.2.5, 4.2.2.2.5, 3.3 thru 3.3.4, 4.3 thru 4.3.4, 3.3.6, 4.3.6, 3.3.6.2, 4.3.6.2	23.1351-23.1367, 25.1351-25.1363, 23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.3.8	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.5.2, 4.1.5.2, 3.1.7.2, 4.1.7.2, 3.1.10, 4.1.10, 3.1.11.11.2, 4.1.11.11.2, 3.2.2.2.2, 4.2.2.2.2, 3.2.2.2.5, 4.2.2.2.5	23.1351-23.1367, 25.1351-25.1363, 23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.3.9	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.2, 4.1.2, 3.1.5.2, 4.1.5.2, 3.1.7.2, 4.1.7.2, 3.1.11.11.2, 4.1.11.11.2, 3.1.13(all), 4.1.13(all), 3.2.2.2.2, 4.2.2.2.2, 3.2.2.2.5, 4.2.2.2.5	23.1351-23.1367, 25.1351-25.1363, 23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.3.10	JSSG-2008: 3.0, 3.1, 3.1.2, 3.1.2.1, 3.1.3, 3.1.7.2, 3.1.7.3, 3.1.10, 3.1.11.11.2, 3.1.12, 3.1.12.1, 3.1.14.4, 3.2.1.3, 3.2.2.2.2, 3.2.2.2.5, 3.2.3.1, and associated section 4 paragraphs	23.1351-23.1367, 25.1351-25.1363, 23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.3.11	JSSG-2008: 3.0, 3.1, 3.1.2, 3.1.2.1, 3.1.3, 3.1.7.2, 3.1.7.3, 3.1.11.11.2, 3.1.13(all), 3.1.14.4, 3.2.1.3, 3.2.2.2.2, 3.2.2.2.5, 3.3 thru 3.3.4, 3.3.6, 3.3.6.2, and associated section 4 paragraphs	23.1351-23.1367, 25.1351-25.1363, 23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.3.12	JSSG-2008: 3.0, 3.1, 3.1.2, 3.1.2.1, 3.1.3, 3.1.7.2, 3.1.7.3, 3.1.11, 3.1.11.11.2, 3.1.12, 3.1.12.1, 3.1.14.4, 3.2.1.3, 3.2.2.2.2, 3.2.2.2.5, 3.3 thru 3.3.4, 3.3.6, 3.3.6.2, and associated section 4 paragraphs	23.1351-23.1367, 25.1351-25.1363, 23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.4 Flight worthiness evaluations.		
6.2.4.1	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.2, 4.1.2, 3.1.2.1, 4.1.2.1, 3.1.5, 4.1.5, 3.1.13(all), 4.1.13(all), 3.1.14(all), 4.1.14(all), 3.5.3, 4.5.3	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.4.2	JSSG-2008: 3.0, 4.0, 3.1, 4.1, 3.1.2, 4.1.2, 3.1.2.1, 4.1.2.1, 3.1.5.6, 4.1.5.6, 3.1.11, 4.1.11, 3.1.11, 3.1.11.1, 4.1.11.1, 3.2.4.1, 4.2.4.1, 3.5.3, 4.5.3	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.4.3	JSSG-2008: 3.1, 3.1.2, 3.1.2.1, 3.1.3, 3.1.5, 3.1.5.1, 3.1.5.2, 3.1.5.4, 3.1.5.5, 3.1.5.7, 3.1.5.8, 3.1.7, 3.1.7.2, 3.1.7.3, 3.1.9, 3.1.10, 3.1.11, 3.1.11.2, 3.1.11.4, 3.1.11.5, 3.1.11.6, 3.1.11.9, 3.1.11.10, 3.1.11.11.2, 3.1.11.11.3, 3.1.12, 3.1.12.1, 3.1.13.1, 3.1.13.2, 3.1.14.2.2, 3.1.14.2.4, 3.2.2.1, 3.2.2.2(all), 3.2.2.5(all), 3.3 thru 3.3.4, 3.3.6, 3.3.6.2, and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.4.4	JSSG-2008: 3.0, 3.1, 3.1.5, 3.1.5.3, 3.1.5.7, 3.1.5.8, 3.1.5.9, 3.1.9, 3.1.14(all), 3.2.1.3, 3.2.1.2, 3.2.2.2(all), 3.2.2.5, 3.2.2.5.4(all), 3.2.2.6, 3.3(all), and associated section 4 paragraphs	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.4.5	JSSG-2008: 3.1.8, 3.1.9	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.4.6	TBD: Refer to technical point of contact for this discipline (listed in section A.20).	TBD: Refer to technical point of contact for this discipline (listed in section A.20).
6.2.4.7	TBD: Refer to technical point of contact for this discipline (listed in section A.20).	TBD: Refer to technical point of contact for this discipline (listed in section A.20).
6.2.5 VCF software.		
6.2.5.1	JSSG-2008: 3.3.6.2	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529



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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.2.5.2	JSSG-2008: 3.2.4.6, 3.3.6-3.3.8	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.5.3	JSSG-2008: 3.1.5.2, 3.1.5.8, 3.1.9, 3.1.11.2, 3.2.1.2, 3.2.3.2	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.5.4	JSSG-2008: 3.1.9-3.1.11.1.1	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.5.5	JSSG-2008: 3.2.4.6, 3.3.6-3.3.8	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.5.6	JSSG-2008: 3.2.4.6, 3.3.6-3.3.8	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.5.7	JSSG-2008: 3.2.4.6, 3.3.6-3.3.8	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.5.8	JSSG-2008: 3.1.11.11.2, 3.1.13	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.2.5.9	JSSG-2008: 3.1.14.6	23.141-23.253, 25.21-25.255, 23.321-23.459, 25.321-25.459, 23.1501-23.1529, 25.1501-25.1529
6.3 Aerodynamics and performance.	JSSG-2001: Appendix D	
6.3.1 Flight vehicle.		
6.3.1.1	JSSG-2001 Appendix D: D.3.1 (all), D.4.1.13	23.21-21.3, 23.21-23.253, 25.1, 25.2, 25.21-25.255, 23.1501-23.1529, 25.1501-25.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.3.1.2	JSSG-2001: 3.1.1.1	23.21-21.3, 23.21-23.253, 25.1, 25.2, 25.21-25.255, 23.1501-23.1529, 25.1501- 25.1529
6.3.1.3	JSSG-2001 Appendix D: D.3.2, D.3.2.10, D.3.8	23.21-21.3, 23.21-23.253, 25.1, 25.2, 25.21-25.255, 23.1501-23.1529, 25.1501- 25.1529
6.3.1.4	JSSG-2001 Appendix D: D.3.2.11, D.3.3.1.4, D.4.2.2.1.2	23.21-21.3, 23.21-23.253, 25.1, 25.2, 25.21-25.255, 23.1501-23.1529, 25.1501- 25.1529
6.3.1.5	JSSG-2001 Appendix D: D.4.1.10	25.1581-25.1587, 23.21-21.3, 23.21-23.253, 25.1, 25.2, 25.21-25.255, 23.1501- 23.1529, 25.1501-25.1529
6.3.1.6	JSSG-2001: 3.3.10.1.1, 3.4.2.1.5, 3.4.2.2	23.21-21.3, 23.21-23.253, 25.1, 25.2, 25.21-25.255, 23.1501-23.1529, 25.1501- 25.1529
6.3.1.7	TBD: Refer to technical point of contact for this discipline (listed in section A.20).	TBD: Refer to technical point of contact for this discipline (listed in section A.20).
6.3.1.8	JSSG-2001 Appendix D: D.4.1.10	25.1581-25.1587, 23.21-21.3, 23.21-23.253, 25.1, 25.2, 25.21-25.255, 23.1501- 23.1529, 25.1501-25.1529, 29.XX (specific rotary wing paragraph TBD by FAA POC)
6.3.2 Installed propulsion capability.		
6.3.2.1	JSSG-2001: 3.3.1.1.1, 3.3.1.1.1.1; and Appendix D: D.3.11.3.1	23.1521, 25.1521
6.3.2.2.a.	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.28, 33.53, AC 33-2B, 33.28-1
6.3.2.2.b.	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.35, 33.67, AC 33-2B, 33-5

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.3.2.2.c.	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.28, 33.53, AC 33-2B, 33.28-1
6.3.2.2.d.	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.28, 33.53, AC 33-2B, 33.28-1
6.3.2.2.e.	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.28, 33.53, AC 33-2B, 33.28-1
6.3.2.2.f.	JSSG-2007: 3.2, 4.2, 3.11, 4.11, 3.12, 4.12, 3.2.2, 3.2.2.7, 4.2.2, 4.2.2.7	33.5, 33.7, AC 33-2B
6.3.2.2.g.	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.28, 33.53, AC 33-2B, 33.28-1
6.3.2.2.h.	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.35, 33.67, AC 33-2B, 33-5
6.3.2.3	JSSG-2001: 3.3.1.1 (all)	23.901-23.943, 25.901- 25.945
6.3.2.4	JSSG-2001: 3.3.1.1 (all)	23.901-23.943, 25.901- 25.945
6.3.2.5	JSSG-2001: 3.3.1.1 (all)	23.901-23.943, 25.901- 25.945
6.3.2.6	JSSG-2007: 3.2, 4.2, 3.11, 4.11, 3.12, 4.12, 3.2.2, 4.2.2	33.5, 33.7, AC 33-2B
6.3.2.7	JSSG-2007: 3.2, 4.2, 3.11, 4.11, 3.12, 4.12, 3.2.2, 4.2.2	33.5, 33.7, AC 33-2B
6.3.2.8	JSSG-2007: 3.3, 4.3, 3.4, 4.4, 3.11, 4.11, 3.12, 4.12	33.14, 33.19, 33.63, 33.75, 33.76, 33.77, 33.90, 33.94, 33.97, AC 33.1B, AC 33.3, AC 33.4, AC 33.4-2, AC 33.5
6.3.3 Flight limits.		
6.3.3.1	JSSG-2001 Appendix D: D.3.2.2.c, D.3.5.16.2	23.321-23.373, 25.321- 25.373

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
6.3.3.2	JSSG-2001 Appendix D: D.3.2.2	23.321-23.373, 25.321- 25.373
6.3.3.3	JSSG-2001 Appendix D: D.3.2.2	23.321-23.373, 25.321- 25.373
6.3.3.4	JSSG-2006: 3.2.4, 3.2.5, 3.2.6, 4.2.4, 4.2.5, 4.2.6	23.23, 23.25, 23.29, 23.31, 25.23, 25.25, 25.27, 25.29, 25.31
6.3.3.5	ADS-51-HDBK, ADS-33E- PRF, AMCP 706-203  Refer to Army Aviation technical point of contact for this discipline for specific guidance (listed in section A.20).	TBD: Refer to technical point of contact for this discipline (listed in section A.20).

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**A.7. Propulsion**

<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
7. Propulsion	JSSG-2007 Engines	23.901-23.1165, 25.901-25.1167
7.1 Performance.		
7.1.1	JSSG-2007: 3.2, 3.2.1, 3.3.1, 3.3.2, 3.3.7, 4.2, 4.2.1, 4.3.1, 4.3.2, 4.3.7, 3.11, 4.11, 3.12, 4.12	33.5, 33.35, 33.7, 33.8, AC 33-2B
7.1.2	JSSG-2007: 3.2, 4.2, 3.11, 4.11, 3.12, 4.12	33.35, 33.5, 33.7, 33.8, AC 33-2B
7.1.3	JSSG-2007: 3.2, 4.2, 3.11, 4.11, 3.12, 4.12	33.35, 33.5, 33.7, 33.8, AC 33-2B
7.2 Operability.		
7.2.1	JSSG-2007: 3.2, 4.2, 3.11, 4.11, 3.12, 4.12, 3.2.2, 3.2.2.11, 4.2.2, 4.2.2.11	33.5, 33.7, AC 33-2B
7.2.2	JSSG-2007: 3.2, 4.2, 3.11, 4.11, 3.12, 4.12, 3.2.2, 3.2.2.7, 4.2.2, 4.2.2.7	33.5, 33.7, AC 33-2B
7.2.3	JSSG-2007: 3.2, 4.2, 3.11, 4.11, 3.12, 4.12	23.901-23.1165, 25.901-25.1167
7.2.4	JSSG-2007: 3.2, 4.2, 3.11, 4.11, 3.12, 4.12, 3.2.2, 4.2.2	33.5, 33.7, AC 33-2B
7.2.5	JSSG 2007: 3.2, 4.2, 3.3.2, 4.3.2	Refer to technical point of contact for this discipline (listed in section A.20).
7.3 Engine structures.		
7.3.1	JSSG-2007: 3.3, 4.3, 3.4, 4.4, 3.11, 4.11, 3.12, 4.12	33.14, 33.19, 33.63, 33.75, 33.76, 33.77, 33.90, 33.94, 33.97, AC 33.1B, AC 33.3, AC 33.4, AC 33.4-2, AC 33.5
7.3.2	JSSG-2007: 3.3, 4.3, 3.4, 4.4, 3.11, 4.11, 3.12, 4.12	33.15, 33.19, AC 33.3, AC 33.15-1
7.3.3	JSSG-2007: 3.3, 4.3, 3.4, 4.4, 3.11, 4.11, 3.12, 4.12	33.83
7.3.4	JSSG-2007: 3.3, 4.3, 3.4, 4.4, 3.11, 4.11, 3.12, 4.12	33.14, 33.19, 33.62, 33.63, 33.90, 33.93, 33.97, AC 33.4, AC 33.4-2

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
7.3.5	JSSG-2007: 3.3, 4.3, 3.4, 4.4, 3.11, 4.11, 3.12, 4.12	AC 33.4-2, AC 33.15-1
7.3.5.1	JSSG-2007: 3.3, 4.3, 3.4, 4.4, 3.11, 4.11, 3.12, 4.12	AC 33.4-2, AC 33.15-1
7.3.6	JSSG-2007: 3.3, 4.3, 3.4, 4.4, 3.11, 4.11, 3.12, 4.12	AC 33.4-2, AC 33.15-1
7.3.7	JSSG-2007: 3.3, 4.3, 3.4, 4.4, 3.11, 4.11, 3.12, 4.12	33.14, 33.19, 33.63, 33.83, 33.97, AC 33.4
7.3.8	JSSG-2007: 3.3, 4.3, 3.4, 4.4, 3.11, 4.11, 3.12, 4.12	33.19, AC 33.4-2
7.3.9	JSSG-2007: 3.3, 4.3, 3.4, 4.4, 3.11, 4.11, 3.12, 4.12	33.27, 33.88, AC 33.3
7.3.10	JSSG-2007: 3.3, 4.3, 3.4, 4.4, 3.11, 4.11, 3.12, 4.12	33.14, A33.3, A33.4, AC 33.3
7.4 Engine control and accessory systems.		
7.4.1	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.28, 33.53, AC 33-2B, 33.28-1
7.4.1.1	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.28, AC 33-2B, 33.28-1
7.4.1.2	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.28, AC 33-2B, 33.28-1
7.4.2	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.28, AC 33-2B, 33.28-1
7.4.2.1	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.28, AC 33-2B, 33.28-1
7.4.2.2	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.28, AC 33-2B, 33.28-1

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
7.4.3	JSSG-2007 references 3.3.3-3.3.3.4, 4.3.3-4.3.3.4, 3.7, 4.7, 3.11, 4.11	AC 33.28(d), AC 20-136.
7.4.4	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.35, 33.67, AC 33-2B, 33-5
7.4.5	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.14, 33.15, 33.19, AC 33-2B, 33.28-1
7.4.6	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.28, 33.69, AC 33-2B, 33.28-1
7.4.7	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.68, 33.77, AC 33-2B, 33.28
7.4.8	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.21, 33.28, AC 33-2B
7.4.9	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.67, 33.71, 33.72, AC 33-2B, 33.28-1
7.4.10	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.73, 33.79, AC 33-2B, 33.28
7.5 Engine monitoring system.		
7.5.1	JSSG-2007: 3.7.6, 4.7.6	33, AC 33-2B, 33.28-1
7.5.2	JSSG-2007: 3.7.6, 4.7.6 JSSG-2010: 3.2.1.5, 3.4	33, AC 33-2B, 33.28-1

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
7.6 Engine bearing and lubrication system.		
7.6.1	JSSG-2007: 3.1.1.10, 4.1.1.10, 3.4, 4.4, 3.7.8, 4.7.8	33.69, 33.71, AC 33-2B
7.6.2	JSSG-2007: 3.1.1.10, 4.1.1.10, 3.4, 4.4, 3.7.8, 4.7.8	33, AC 33-2B
7.6.3	JSSG-2007: 3.1.1.10, 4.1.1.10, 3.4, 4.4, 3.7.8, 4.7.8	33.69, 33.71, AC 33-2B
7.6.3.1	JSSG 2007: 3.7.8, 4.7.8, 3.7.9, 4.7.9	33.71, AC 33-2B
7.6.3.2	JSSG 2007: 3.7.6, 4.7.6, 3.7.8, 4.7.8, 3.7.9, 4.7.9	33.71, AC 33-2B
7.6.3.3	JSSG 2007: 3.7.8.3	33.71, AC 33-2B
7.6.4	JSSG-2007: 3.1.1.10, 4.1.1.10, 3.4, 4.4, 3.7.8, 4.7.8	33.17, 33.39, 33.71, AC 33-2B
7.7 Engine installations compatibility.		
7.7.1	JSSG-2007: 3.1, 4.1, 3.4, 4.4	33.5, 33.23, 33.28, AC 33-2B
7.7.2	JSSG-2007: 3.1, 4.1, 3.4, 4.4	33.15, 33.23, 33.5, 33.63, 33.75, AC 33-2B
7.7.3	JSSG-2007: 3.1, 4.1, 3.4, 4.4	33.15, 33.23, 33.5, 33.63, 33.75, AC 33-2B
7.7.4	JSSG-2007: 3.1, 4.1, 3.4, 4.4	33.15, 33.23, 33.5, 33.63, 33.75, AC 33-2B
7.8 Failure modes.		
7.8.1	JSSG-2007: 3.5.1.1, 4.5.1.1	33.75, AC 33-2B
7.8.2	JSSG-2007: 3.5.1.1, 4.5.1.1	33.75, AC 33-2B



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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
7.9 Flight manual/ procedures and limitations.		
7.9.1	JSSG-2007: 3.2.2, 4.2.2	No applicable reference available.
7.10 Engine externals.		
7.10.1	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.23, 33.25, 33.28, AC 33-2B, 33.28-1
7.10.1.1	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.23, 33.25, 33.28, 33.63, AC 33-2B
7.10.1.2	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.23, 33.25, 33.28, 33.91, AC 33-2B
7.10.1.3	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.17, 33.75, 33.91, AC 33-2B
7.10.1.4	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.17, 33.75, 33.91, AC 33-2B
7.10.1.5	JSSG-2007: 3.1.1.15, 4.1.1.15, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.7, 4.7, 3.11, 4.11, 3.12, 4.12	33.15, 33.19, 33.6333.75, AC 33-2B
7.10.2	JSSG 2007: 3.7.8, 4.7.8, 3.7.16, 4.7.16	33.23, 33.25, AC33-2B
7.10.2.1	JSSG 2007: 3.7.8, 4.7.8, 3.7.16, 4.7.16" in second column entitled "Support Documentation	33.23, 33.25, AC33-2B
7.10.2.2	JSSG-2007: 3.1.1.10, 4.1.1.10, 3.4, 4.4, 3.7.8, 4.7.8	33.25, 33.53, AC 33-2B

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
7.11 Engine computer resources.		
7.11.1	JSSG-2007: 3.8, 4.8	33.28, 33.75, AC 33-2B
7.11.2	JSSG-2007: 3.8, 4.8	33.28, 33.75, AC 33-2B, 33.28-1
7.12 Propellers and associated subsystem components.		
7.12.1	JSSG-2007: 3.4, 4.4, 3.7, 4.7	33.95, FAR 35, AC 20-66A, 35.37-1A
7.12.2	JSSG-2007: 3.4, 4.4, 3.7, 4.7	35, AC 20-66A
7.12.3	JSSG-2007: 3.4, 4.4, 3.7, 4.7	35.21, 35.23
7.12.4	JSSG-2007: 3.4, 4.4, 3.7, 4.7	35.3
7.13 Rotors and associated subsystem components		
7.13.1	ADS-51-HDBK, ADS-33E-PRF, AMCP 706-203  Refer to Army Aviation technical point of contact for this discipline for specific guidance (listed in section A.20).	Refer to technical point of contact for this discipline (listed in section A.20).
7.13.2	ADS-51-HDBK, ADS-33E-PRF, AMCP 706-203  Refer to Army Aviation technical point of contact for this discipline for specific guidance (listed in section A.20).	Refer to technical point of contact for this discipline (listed in section A.20).

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## APPENDIX

### A.8. Air Vehicle Subsystems

CERTIFICATION CRITERIA	SUPPORT DOCUMENTATION	FEDERAL AVIATION REGULATIONS
8. Air Vehicle Subsystems	JSSG-2000 Air System, JSSG-2001 Air Vehicle, JSSG-2009 Air Vehicle Subsystems, and Appendixes	
8.1 Hydraulic and pneumatic systems.	JSSG-2009 Appendix B, Appendix M	23.1435, 23.1438  (Note: FAR paragraphs listed in the following section are not necessarily sufficient to fully satisfy the corresponding criteria.)
8.1.1	JSSG-2009 Appendix B: B.3.4.2, B.4.4.2, B.3.4.2.1.16, B.4.4.2.1.16; and Appendix M: M.3.4.13, M.4.4.13	25.1435 b4
8.1.1.1	JSSG-2009 Appendix B: B.3.4.2, B.4.4.2; and Appendix M: M.3.4.13, M.4.4.13	No applicable reference available.
8.1.2	JSSG-2009 Appendix B: B.3.4.2, B.4.4.2, B.3.4.2.1.16, B.4.4.2.1.16; and Appendix M: M.3.4.13, M.4.4.13	No applicable reference available.
8.1.3	JSSG-2009 Appendix B: B.3.4.2.1.10, B.4.4.2.1.10; and Appendix M: M.3.4.13, M.4.4.13	No applicable reference available.
8.1.4	JSSG-2009 Appendix B: B.3.4.2.1.14, B.4.4.2.1.14, B.3.4.2.1.14.1, B.4.4.2.1.14.1	No applicable reference available.
8.1.5	JSSG-2009 Appendix B: B.3.4.2.1.3, B.4.4.2.1.3, B.3.4.2.1.4.3, B.4.4.2.1.4.3, B.3.4.2.1.4.4, B.4.4.2.1.4.4, B.3.4.2.2.3, B.4.4.2.2.3; and Appendix M: M.3.4.13.3, M.4.4.13.3	23.1435 a2, 25.1435 b1
8.1.6	JSSG-2000: 3.6.2	Refer to technical point of contact for this discipline (listed in section A.20).

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.1.7	JSSG-2009 Appendix B: B.3.4.2.1.1, B.4.4.2.1.1, B.3.4.2.1.2, B.4.4.2.1.2, B.3.4.2.1.4, B.4.4.2.1.4, B.3.4.2.1.4.1, B.4.4.2.1.4.1, B.3.4.2.1.4.2, B.4.4.2.1.4.2, B.3.4.2.1.5, B.4.4.2.1.5, B.3.4.2.1.5.1, B.4.4.2.1.5.1, B.3.4.2.1.5.2, B.4.4.2.1.5.2, B.3.4.2.1.5.3, B.4.4.2.1.5.3, B.3.4.2.1.9, B.4.4.2.1.9, B.3.4.2.1.11, B.4.4.2.1.11, B.3.4.2.1.12, B.4.4.2.1.12, B.3.4.2.1.13, B.4.4.2.1.13, B.3.4.2.1.15, B.4.4.2.1.15, B.3.4.2.1.16.1, B.4.4.2.1.16.1, B.3.4.2.1.17, B.4.4.2.1.17, B.3.4.2.2, B.4.4.2.2; and Appendix M: M.3.4.13.1, M.4.4.13.1, M.3.4.13.2, M.4.4.13.2, M.3.4.13.4, M.4.4.13.4, M.6.4.1 thru M.6.4.13	23.1435 a1, a3, c1, c2, 25.1435 a2, a4, a5
8.1.8	JSSG-2009 Appendix B: B.3.4.2, B.4.4.2, B.3.4.2.1.2, B.4.4.2.1.2; and Appendix M: M.3.4.13, M.4.4.13	Refer to technical point of contact for this discipline (listed in section A.20).
8.1.9	JSSG-2009 Appendix B: B.3.4.2.1.5, B.4.4.2.1.5, B.3.4.2.1.5.1, B.4.4.2.1.5.1, B.3.4.2.1.5.2, B.4.4.2.1.5.2; and Appendix M: M.3.4.13.2, M.4.4.13.2	23.1435 a3, 25.1435 b2
8.1.10	JSSG-2009 Appendix B: B.3.4.2.1.6, B.4.4.2.1.6, B.3.4.2.1.6.1, B.4.4.2.1.6.1, B.3.4.2.1.6.2, B.4.4.2.1.6.2, B.3.4.2.1.7, B.4.4.2.1.7, B.3.4.2.1.8, B.4.4.2.1.8; and Appendix M: M.3.4.13.4, M.4.4.13.4	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.2 Environmental management system (EMS).		Note: FAR paragraphs listed in the following section are not necessarily sufficient to fully satisfy the corresponding criteria.
8.2.1	JSSG-2009: 3.3.3, 4.3.3	23 Miscellaneous & Cooling Paragraphs
8.2.2	JSSG-2009: 3.3.3, 4.3.3	23.1041, 23.1093
8.2.3	JSSG-2009: 3.3.6, 4.3.6, JSSG-2001: 3.3.10, 3.3.10.1	23.1043, 23.1045, 23.1047, 25.1041, 25.1043, 25.1045
8.2.4	JSSG-2009 Appendix D: D.3.4.4.5, D.4.4.4.5	23.831, 25.831
8.2.5	JSSG-2009 Appendix D: D.3.4.4.1, D.4.4.4.1	23.365, 25.841
8.2.6	JSSG-2009: 3.2.4, 3.2.5, 3.2.7.4.4, 3.2.7.6, 3.3.3, 4.2.4, 4.2.5, 4.2.7.4.4, 4.2.7.6, 4.3.3,  JSSG-2009 Appendix D: D.3.4.4.3, D.3.4.4.5, D.3.4.4.12, D.4.4.3.3, D.4.4.4.5, D.4.4.4.12	23.775, 25.775
8.2.7	Refer to technical point of contact for this discipline (listed in section A.20).	23.1581
8.2.8	JSSG-2009 Appendix D: D.3.4.4.3, D.4.4.3.3	No applicable reference available.
8.2.9	JSSG-2009 Appendix D: D.3.4.4.3, D.4.4.3.3	No applicable reference available.
8.2.10	JSSG-2009 Appendix D: D.3.4.4.8, D.4.4.4.8, D.3.4.4.9, D.4.4.4.9, D.3.4.4.11, D.4.4.4.11	23.1419, 25.1419,  23 Miscellaneous (Safe Operations Certification)
8.2.11	JSSG-2009 Appendix D: D.3.4.4.6, D.4.4.4.6	23.1109, 23.1111, 25.832
8.2.12	JSSG-2009 Appendix D: D. 3.4.4.12, D.4.4.4.12 MIL-HDBK-221: 2.8 (ALL)	23.1109, 23.1111
8.2.13	JSSG-2009 Appendix D: D.3.4.4.12, D.4.4.4.12	23.1109, 23.1111

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.2.14	JSSG-2009 Appendix D: D.3.4.4.1, D.4.4.4.1	23.365, 23.841, 23.843, 25.843
8.2.15	JSSG-2009 Appendix D: D.3.4.4.6.3, D.4.4.4.6.3;  JSSG-2001: 3.1.8.2.6, 3.1.8.2.7	No applicable reference available.
8.2.16	JSSG-2009 Appendix D: D.3.4.4.2, D.3.4.4.18, D.4.4.4.2, D.4.4.4.18,  JSSG-2001: 3.3.10, 3.3.10.1	No applicable reference available.
8.2.17	JSSG-2009 Appendix D: D.3.4.4, D.4.4.4	No applicable reference available.
8.2.18	JSSG-2009 Appendix D: D.3.4.4.5, D.4.4.4.5	23.831, 25.831
8.2.19	JSSG-2009 Appendix D: D.3.4.4.4, D.4.4.4.4	No applicable reference available.
8.3 Fuel system.		23.951-23.979, 23.991- 23.1001, 25.951-25.981, 25.991-25.1001  (Note: FAR paragraphs listed in the following section are not necessarily sufficient to fully satisfy the corresponding criteria.)
8.3.1	JSSG-2009 Appendix E: E.3.4.5.1.1, E.4.4.5.1.1, E.3.4.5.1.2, E.4.4.5.1.2, E.3.4.5.1.3, E.4.4.5.1.3, E.3.4.5.1.3.11, E.4.4.5.1.3.11, E.3.4.5.2.1, E.4.4.5.2.1, E.3.4.5.2.2, E.4.4.5.2.2, E.3.4.5.3, E.4.4.5.3	23.951-23.979, 23.991- 23.1001, 25.951-25.981, 25.991-25.1001
8.3.2	JSSG-2009 Appendix E: E.3.4.5.1.1, E.4.4.5.1.1, E.3.4.5.1.2, E.4.4.5.1.2, E.3.4.5.1.3, E.4.4.5.1.3, E.3.4.5.1.4, E.4.4.5.1.4, E.3.4.5.2.1, E.4.4.5.2.1, E.3.4.5.2.2, E.4.4.5.2.2	23.951-23.979, 23.991- 23.1001, 25.951-25.981, 25.991-25.1001, AC 20-29

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.3.3	JSSG-2009 Appendix E: E.3.4.5.1.12, E.4.4.5.1.12	23.951-23.979, 23.991- 23.1001, 25.951-25.981, 25.991-25.1001
8.3.4	JSSG-2009: 3.3.3.1, 4.3.3.1, 3.3.8, 4.3.8	23.963, 23.993, 23.994, 25.963, 25.993, 25.994
8.3.5	JSSG-2009 Appendix E: E.3.4.5.1.5, E.4.4.5.1.5, E.3.4.5.1.6, E.4.4.5.1.6, E.3.4.5.1.7, E.4.4.5.1.7, E.3.4.5.1.8, E.4.4.5.1.8, E.3.4.5.6.1, E.4.4.5.6.1	23.993, 25.993
8.3.6	JSSG-2009 Appendix E: E.3.4.5.2.1, E.4.4.5.2.1, E.3.4.5.2.2, E.4.4.5.2.2, E.3.4.5.2.4, E.4.4.5.2.4, E.3.4.5.2.5, E.4.4.5.2.5	23.951, 23.953, 23.955, 23.959, 25.951, 25.953, 25.955, 25.959
8.3.7	JSSG-2009 Appendix E: E.3.4.5.2.3, E.4.4.5.2.3, E.3.4.5.4, E.4.4.5.4, E.3.4.5.4.1, E.4.4.5.4.1	23.951, 23.952, 23.953, 23.955, 23.961, 25.951, 25.952, 25.953, 25.955, 25.961
8.3.8	JSSG-2009 Appendix E: E.3.4.5.5, E.4.4.5.5	23.1001, 25.1001
8.3.9	JSSG-2009 Appendix E: E.3.4.5.1.7, E.4.4.5.1.7, E.3.4.5.1.8, E.4.4.5.1.8, E.3.4.5.8, E.4.4.5.8	23.963, 23.979, 25.963, 25.979
8.3.10	JSSG-2009: 3.2.6, 4.2.6	No applicable reference available.
8.3.11	JSSG-2009 Appendix E: E.3.4.5.6.2, E.4.4.5.6.2, E.3.4.5.6.3, E.4.4.5.6.3, E.3.4.5.1.3, E.4.4.5.1.3	23.971, 23.973, 23.977, 23.997, 25.971, 25.973, 25.977, 25.997 AC 20-119
8.3.12	JSSG-2009 Appendix E: E.3.4.5.1.9, E.4.4.5.1.9, E.3.4.5.1.11, E.4.4.5.1.11, E.3.4.5.7, E.4.4.5.7, E.3.4.5.8.12, E.4.4.5.8.12,	23.863, 23.954, 23.971, 23.975, 25.863, 25.954, 25.971, 25.975, 25.981, AC 20-53A, AC 20-136, AC 25.981-2, AC 25.981-1B, AC 25-16

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.3.12.1	JSSG-2009 Appendix E: E.3.4.5.1.9, E.4.4.5.1.9, E3.4.5.1.11 & E4.4.5.1.11 Appendix G: 3.4.7, G4.4.7	23.954, 23.975, 25.954, 25.975, 25.981, AC 20-53A, AC 20-136, AC 25-16, AC 25.981-1B, AC 25.981-2
8.3.12.2	JSSG-2009 Appendix E: E.3.4.5.6.11, E.4.4.5.6.11	23.863, 23.967, 23.1185, 25.863, 25.967, 25.1185, 25.981, AC 25-981-2, AC 25-981-1B
8.3.12.3	JSSG-2009 Appendix E: E.3.4.5.6.2, E.4.4.5.6.2, E.3.4.5.1.10, E.4.4.5.1.10	23.977, 23.997, 23.999, 25.977, 25.997, 25.999
8.3.12.4	JSSG-2009 Appendix E: E.3.4.5.2.6, E.4.4.5.2.6	23.971, 23.999, 23.1001, 25.971, 25.999, 25.1001
8.3.13	JSSG-2009 Appendix E: E.3.4.5.6, E.4.4.5.6, E.3.4.5.6.13, E.4.4.5.6.13	23.963, 23.965, 23.993, 25.963, 25.965, 25.993, AC 25.963-1
8.3.14	JSSG-2009: 3.2.9.1, 4.2.9.1, and Appendix E: E.3.4.5.1.7, E.4.4.5.1.7, E.3.4.5.1.8, E.4.4.5.1.8, E.3.4.5.1.12, E.4.4.5.1.12	23.957, 23.963, 23.965, 25.957, 25.963, 25.965, AC 25.963-1
8.3.15	JSSG-2009 Appendix E: E.3.4.5.1.12, E.4.4.5.1.12, E.3.4.5.8.1, E.4.4.5.8.1, E.3.4.5.8.4, E.4.4.5.8.4, E.3.4.5.8.5, E.4.4.5.8.5, E.3.4.5.8.6, E.4.4.5.8.6, E.3.4.5.8.7, E.4.4.5.8.7, E.3.4.5.8.8, E.4.4.5.8.8	23.863, 23.973, 23.975, 23.979,  25.863, 25.973, 25.975, 25.979,
8.3.16	JSSG-2009 Appendix E: E.3.4.5.1.12, E.4.4.5.1.12, E.3.4.5.6.1, E.4.4.5.6.1, E.3.4.5.8.1, E.4.4.5.8.1, E.3.4.5.8.11, E.4.4.5.8.11, E.3.4.5.8.14, E.4.4.5.8.14, E.3.4.5.9, E.4.4.5.9	23.969, 23.975, 25.969, 25.975



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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.3.17	JSSG-2009 Appendix E: E.3.4.5.1.12, E.4.4.5.1.12, E.3.4.5.8.11, E.4.4.5.8.11, E.3.4.5.12, E.4.4.5.12, E.3.4.5.12.1, E.4.4.5.12.1, E.3.4.5.12.2, E.4.4.5.12.2, E.3.4.5.12.3, E.4.4.5.12.3, E.3.4.5.12.4, E.4.4.5.12.4, E.3.4.5.12.5, E.4.4.5.12.5	No applicable reference available.
8.3.18	JSSG-2009: 3.2.9, 4.2.9 and Appendix E: E.3.4.5.8.11, E.4.4.5.8.11, E.3.4.5.12.5, E.4.4.5.12.5	23.979, 25.979
8.3.19	JSSG-2009 Appendix E: E.3.4.5.10, E.4.4.5.10	23.1001, 25.1001
8.4 Fire and hazard protection.		23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411  (Note: FAR paragraphs listed in the following section are not necessarily sufficient to fully satisfy the corresponding criteria.)
8.4.1	JSSG-2009 Appendix G: G.3.4.7, G.4.4.7, G.3.4.7.1, G.4.4.7.1, G.3.4.7.2, G.4.4.7.2, G.3.4.7.29, G.4.4.7.29	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.2	JSSG-2009 Appendix G: G.3.4.7, G.4.4.7  MIL-HDBK-221: 2.11(ALL)	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.3	JSSG-2009 Appendix G: G.3.4.7.1, G.4.4.7.1  MIL-HDBK-221: 2.1, 2.2.1.2, 2.2.1.4, 2.2.1.5, 2.2.1.6, 2.2.1.7, 2.2.1.8, 2.2.2 through 2.2.9, 2.5, 2.6, 2.7.3, 2.7.11, 2.7.13, 2.10.2 through 2.10.8.	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.3.1	JSSG-2009 Appendix G: G.3.4.7.3, G.4.4.7.3, G.3.4.7.6, G.4.4.7.6	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.4.3.2	JSSG-2009 Appendix G: G.3.4.7.6, G.4.4.7.6, G.3.4.7.21, G.4.4.7.21	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.4	JSSG-2009 Appendix G: G.3.4.7.3, G.4.4.7.3, G.3.4.7.4, G.4.4.7.4, G.3.4.7.5, G.4.4.7.5, G.3.4.7.18, G.4.4.7.18 MIL-HDBK-221: 2.4(ALL)	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.4.1	JSSG-2009 Appendix G: G.3.4.7.3, G.4.4.7.3, G.3.4.7.4, G.4.4.7.4, G.3.4.7.17, G.4.4.7.17, G.3.4.7.18, G.4.4.7.18, G.3.4.7.22, G.4.4.7.22	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.5	JSSG-2009 Appendix G: G.3.4.7.3, G.4.4.7.3, G.3.4.7.5, G.4.4.7.5	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.6	JSSG-2009 Appendix G: G.3.4.7.4, G.4.4.7.4, G.3.4.7.18, G.4.4.7.18	23.851-23.865, 25.851-25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.7	JSSG-2009 Appendix G: G.3.4.7.19, G.4.4.7.19, G.3.4.7.20, G.4.4.7.20, G.3.4.7.24, G.4.4.7.24, G.3.4.7.27, G.4.4.7.27 MIL-HDBK-221: 2.12, 2.13 (All except any reference to Halon), 2.17	23.851-23.865, 25.851-25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.8	JSSG-2009 Appendix G: G.3.4.7.20, G.4.4.7.20, G.3.4.7.21, G.4.4.7.21 MIL-HDBK-221: 2.7.4	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.9	JSSG-2009 Appendix G: G.3.4.7.10, G.4.4.7.10	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.4.10	JSSG-2009 Appendix G: G.3.4.7.8, G.4.4.7.8, G.3.4.7.9, G.4.4.7.9, G.3.4.7.26, G.4.4.7.26, G.3.4.7.27, G.4.4.7.27, G.3.4.7.28, G.4.4.7.28	23.851-23.865, 25.851-25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.11	JSSG-2009 Appendix G: G.3.4.7.9, G.4.4.7.9, G.3.4.7.10, G.4.4.7.10, G.3.4.7.11, G.4.4.7.11, G.3.4.7.12, G.4.4.7.12, G.3.4.7.13, G.4.4.7.13, G.3.4.7.14, G.4.4.7.14, G.3.4.7.15, G.4.4.7.15	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.12	JSSG-2009 Appendix G: G.3.4.7.24, G.4.4.7.24, G.3.4.7.25, G.4.4.7.25, G.3.4.7.26, G.4.4.7.26	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.13	JSSG-2009 Appendix G: G.3.4.7.20, G.4.4.7.20 MIL-HDBK-221: 2.7.8, 2.11(ALL),	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.14	JSSG-2009 Appendix G: G.3.4.7.7, G.4.4.7.7, G.3.4.7.22, G.4.4.7.22 MIL-HDBK-221: 2.7.9	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411, AC 25.853-1, AC 25.869-1
8.4.15	JSSG-2009 Appendix G: G.3.4.7.22, G.4.4.7.22	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411, AC 25-9
8.4.16	JSSG-2009 Appendix G: G.3.4.7.16, G.4.4.7.16, G.3.4.7.17, G.4.4.7.17 MIL-HDBK-221: 2.7.2, 2.7.10, 2.10.4.2, 2.10.2.1	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.4.17	JSSG-2009 Appendix G: G.3.4.7.17, G.4.4.7.17, G.3.4.7.19, G.4.4.7.19	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.4.18	JSSG-2009 Appendix G: G.3.4.7.7, G.4.4.7.7, G.3.4.7.13, G.4.4.7.13, G.3.4.7.31, G.4.4.7.31	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411, AC 20-42C
8.4.19	JSSG-2009 Appendix G: G.3.4.7.7, G.4.4.7.7 MIL-HDBK-221: 2.15 (ALL)	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411, AC 25-17, AC 25.994.1
8.4.20	JSSG-2009 Appendix G: G.3.4.7.23, G.4.4.7.23, G.3.4.7.28, G.4.4.7.28	23.851-23.865, 25.851- 25.869, 23.1181-23.1203, 25.1181-25.1207, 23.1411, 25.1411
8.5 Landing gear and deceleration systems.		23.721-23.745, 25.721- 25.737  (Note: FAR paragraphs listed in the following section are not necessarily sufficient to fully satisfy the corresponding criteria.)
8.5.1	JSSG-2009 Appendix A: A.3.4.1.2.1, A.4.4.1.2.1	No applicable reference available.
8.5.2 Arrangement, dynamics, and clearances	AFGS-87139: 3.2.1.1, 3.2.1.2	23.721-23.745, 25.721- 25.737
8.5.2.1	JSSG-2009 Appendix A: A.3.4.1.1.1, A.4.1.1.1, A.3.4.1.1.6, A.4.4.1.1.6, A.3.4.1.1.3, A.4.4.1.1.3, AFGS-87193: 3.2.1.2, 3.2.1.3	23.1501, 23.1529, 25.1501, 25.1503-25.1533, 25.1529, 25.1541, 25.1543, 25.1557, 25.1563
8.5.2.2	JSSG-2009 Appendix A: A.3.4.1.1.2, A.4.4.1.1.2, A.3.4.1.1.7, A.4.4.1.1.7, AFGS-87139: 3.2.1.2, 3.2.5.1	25.233
8.5.2.3	JSSG-2009 Appendix A: A.3.4.1.1.4, A.4.4.1.1.4, AFGS-87139: 3.2.1.2, 3.2.1.3	23.745

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.5.2.4	JSSG-2009 Appendix A: A.3.4.1.1.2, A.4.4.1.1.2, A.3.4.1.1.7, A.4.4.1.1.7, A.3.4.1.4.2, A.4.4.1.4.2, A.3.4.1.4.3, A.4.4.1.4.3, A.3.4.1.4.5.1, A.4.4.1.4.5.1, AFGS-87139: 3.2.1.2, 3.2.1.4	23.721-23.745, 25.721- 25.737
8.5.2.5	JSSG-2009 Appendix A: A.3.4.1.3.1.14, A.4.4.1.3.1.14, A.3.4.1.2.2.1.3, A.4.4.1.2.2.1.3	23.509, 25.507, 25.509
8.5.2.6	JSSG-2009 Appendix A: A.3.4.1.10, A.4.4.1.10	No applicable reference available.
8.5.2.6.1	JSSG-2009 Appendix A: A.3.4.1.10, A.4.4.1.10	No applicable reference available.
8.5.3 Landing gear structure		23.721-23.745, 25.721- 25.737
8.5.3.1	AFGS-87139: 3.2.2.1	23.721, 25.721
8.5.3.2	JSSG-2009 Appendix A: A.3.4.1.3.1.8, A.4.4.1.3.1.8, MIL-STD-6053, MIL-L-8552, AFGS-87139: 3.2.2.1, 3.2.2.2	23.721-23.745, 23.1501, 23.1529, 25.721-25.737, 25.1501, 25.1503-25.1533, 25.1529, 25.1541, 25.1543, 25.1557, 25.1563
8.5.3.3	MIL-STD-6053, MIL-L-8552, AFGS-87139: 3.2.1.3	23.1501, 23.1529, 25.1501, 25.1503-25.1533, 25.1529, 25.1541, 25.1543, 25.1557, 25.1563
8.5.3.4	JSSG-2009 Appendix A: A.3.4.1.3.1.7, A.4.4.1.3.1.7, A.3.4.1.3.1.8, A.4.4.1.3.1.8, A.3.4.1.3.1.11, A.4.4.1.3.1.11, AFGS-87139: 3.2.2.1, 3.2.2.2	23.721-23.731, 23.473, 23.477, 23.479, 23.481, 23.483, 23.485, 25.721- 25.731, 25.101, 25.511, 25.1583
8.5.3.5	JSSG-2009 Appendix A: A.3.4.1.1.7, A.4.4.1.1.7, A.3.4.1.4.5.1, A.4.4.1.4.5.1, AFGS-87139: 3.2.1.2, 3.2.1.4	23.721-23.745, 25.721- 25.737
8.5.4	JSSG-2009 Appendix A: A.3.4.1.3.1.4, A.4.4.1.3.1.4, A.3.4.1.11.1.1, A.4.4.1.11.1.1, MIL-PRF-5041, AFGS-87139: 3.2.4.1	23.473, 23.726, 23.733, 25.473, 25.726, 25.733

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.5.5	JSSG-2009 Appendix A: A.3.4.1.3.1.4, A.4.4.1.3.1.4, A.3.4.1.11.2.1, A.4.4.1.11.2.1, A.3.4.1.11.2.4, A.4.4.1.11.2.4, AFGS-87139: 3.2.4.2, MIL-PRF-8584, MIL-PRF-5013, SAE ARP-1493	23.721-23.732, 23.471- 23.511, 25.721-25.732, 25.471-25.511, 25.101
8.5.6	JSSG-2009 Appendix A: A3.4.1.11.2.3, A.4.4.1.11.2.3, A.3.4.1.11.2.6, A.4.4.1.11.2.6, A3.4.1.11.3.1, A.4.4.1.11.3.1, A.3.4.1.11.3.7, A.4.4.1.11.3.7, MIL-PRF-5013, SAE ARP-1493, AFGS-87139: 3.2.4.2	Included in each specific FAR per section.
8.5.7 Brake		
8.5.7.1	JSSG-2009 Appendix A: A.3.4.1.11.3.1, A.4.4.1.11.3.1, MIL-PRF-5013, SAE ARP-1493	23.45, 23.55, 23.493, 23.735, 25.45, 25.55, 25.493, 25.735, 25.101
8.5.7.2	JSSG-2009 Appendix A: A.3.4.1.11.3.3, A.4.4.1.11.3.3, A.3.4.1.11.2.4, A.4.4.1.11.2.4, MIL-PRF-5013, SAE ARP-1493, AFGS-87139: 3.2.3.1, 3.2.4.3	No applicable reference available.
8.5.7.3	JSSG-2009 Appendix A: A.3.4.1.7, A.4.4.1.7, MIL-PRF-5013, MIL-PRF-8584, SAE ARP-1493, AFGS-87139: 3.2.3.1, 3.2.4.3	23.735, 25.735
8.5.7.4	JSSG-2009 Appendix A: A.3.4.1.11.2.3, A.4.4.1.11.2.3, A.3.4.1.11.2.6, A.4.4.1.11.2.6, A.3.4.1.11.3.7, A.4.4.1.11.3.7, MIL-PRF-5013, SAE ARP-1493, AFGS-87139: 3.2.3.1, 3.2.4.3	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.5.7.5	JSSG-2009 Appendix A: A.3.4.1.11.2.3, A.4.4.1.11.2.3, A.3.4.1.11.2.6, A.4.4.1.11.2.6, A.3.4.1.11.3.7, A.4.4.1.11.3.7, MIL-PRF-5013, SAE ARP-1493, AFGS-87139: 3.2.3.1, 3.2.4.2, 3.2.4.3	No applicable reference available.
8.5.8 Brake control and anti- skid control		
8.5.8.1	JSSG-2009 Appendix A: A.3.4.1.4.4.2, A.4.4.1.4.4.2, MIL-PRF-8584, SAE ARP-1070, AFGS-87139: 3.2.3.2, 3.2.4.3	No applicable reference available.
8.5.8.2	JSSG-2009 Appendix A: A.3.4.1.4.2, A.4.4.1.4.2, A.3.4.1.4.4.1, A.4.4.1.4.4.1, MIL-PRF-8584, SAE ARP-1070, AFGS-87139: 3.2.3.1, 3.2.3.2, 3.2.3.3, 3.2.4.3	23.45, 23.55, 23.493, 23.735, 23.101, 25.45, 25.55, 25.493, 25.735, 25.101
8.5.8.3	JSSG-2009 Appendix A: A.3.4.1.9.5, A.4.4.1.9.5, MIL-PRF-8584, AFGS-87139: 3.2.3.2	No applicable reference available.
8.5.8.4	JSSG-2009 Appendix A: A.3.4.1.4.4.3, A.4.4.1.4.4.3, A.3.4.1.11.3.1, A.4.4.1.11.3.1, MIL-PRF-8584, SAE ARP-1070, AFGS-87139: 3.2.3.1, 3.2.3.3, 3.2.4.3	23.45, 23.55, 23.493, 23.735, 25.45, 25.55, 25.493, 25.735, 25.1587
8.5.8.5	JSSG-2009 Appendix A: A.3.4.1.4.4.4, A.4.4.1.4.4.4, A.3.4.1.4.4.5, A.4.4.1.4.4.5, MIL-PRF-8584, SAE ARP-1070, AFGS-87139: 3.2.3.3, 3.2.4.3	No applicable reference available.
8.5.8.6	JSSG-2009 Appendix A: A.3.4.1.4.4.3, A.4.4.1.4.4.3, MIL-PRF-8584, SAE ARP-1070, AFGS-87139: 3.2.3.3, 3.2.4.3	23.45, 23.55, 23.493, 23.735, 25.45, 25.55, 25.493, 25.735

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.5.8.7	JSSG-2009 Appendix A: A.3.4.1.4.4.1, A.4.4.1.4.4.1, MIL-PRF-8584, SAE ARP-1070	No applicable reference available.
8.5.8.8	JSSG-2009 Appendix A: A.3.4.1.4.4.1, A.4.4.1.4.4.1, MIL-PRF-8584, SAE ARP-1070, AFGS-87139: 3.2.3.2, 3.2.3.3, 3.2.4.3	No applicable reference available.
8.5.8.9	JSSG-2009: 3.2.7.4.4.2, 4.2.7.4.4.2; and Appendix A: A.3.4.1.4.3, A.4.4.1.4.3, A.3.4.1.4.4.2, A.4.4.1.4.4.2, MIL-PRF-8584, SAE ARP-1070, AFGS-87139: 3.2.3.1, 3.2.3.2, 3.2.3.3, 3.2.4.3	No applicable reference available.
8.5.8.10	JSSG-2009: 3.2.7.2, 4.2.7.2, MIL-PRF-8584, SAE ARP-1070, AFGS-87139: 3.2.3.1, 3.2.3.2, 3.2.3.3, 3.2.4.3	No applicable reference available.
8.5.8.11	JSSG-2006: 3.4.2.7, 4.4.2, AFGS-87139: 3.2.1.4, 3.2.3.3	No applicable reference available.
8.5.9 Directional control		
8.5.9.1	JSSG-2009 Appendix A: A.3.4.1.4.2, A.4.4.1.4.2, A.3.4.1.4.3, A.4.4.1.4.3, MIL-PRF-8812, AFGS-87139: 3.2.5.1, 3.2.5.2	23.45, 23.497, 23.499, 23.745
8.5.9.2	JSSG-2009 Appendix A: A.3.4.1.4.5.2, A.4.4.1.4.5.2, A.3.4.1.4.5.3, A.4.4.1.4.5.3, MIL-PRF-8812, AFGS-87139: 3.2.5.1, 3.2.5.2	No applicable reference available.
8.5.9.3	JSSG-2009 Appendix A: A.3.4.1.4.5.1, A.4.4.1.4.5.1, MIL-PRF-8812, AFGS-87139: 3.2.5.1, 3.2.5.2	No applicable reference available.
8.5.9.4	JSSG-2009 Appendix A: A.3.4.1.4.5.2, A.4.4.1.4.5.2, MIL-PRF-8812	No applicable reference available.



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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.5.9.5	JSSG-2009 Appendix A: A.3.4.1.4.5.1, A.4.4.1.4.5.1, MIL-PRF-8812, AFGS-87139: 3.2.5.1, 3.2.5.2	23.45, 23.497, 23.499, 23.745, 25.45, 25.497, 25.499, 25.745, 25.233
8.5.10 Landing gear control		
8.5.10.1	JSSG-2009 Appendix A: A.3.4.1.1.3, A.4.4.1.1.3, A.3.4.1.1.4, A.4.4.1.1.4, A.3.4.1.5.1, A.4.4.1.5.1, AFGS-87139: 3.2.6.1, 3.2.6.2	23.729, 25.729
8.5.10.2	JSSG-2009 Appendix A: A.3.4.1.5.3, A.4.4.1.5.3, A.3.4.1.5.4, A.4.4.1.5.4, A.3.4.1.5.6, A.4.4.1.5.6, A.3.4.1.5.7, A.4.4.1.5.7, AFGS-87139: 3.2.6.1, 3.2.6.2	23.729, 25.729
8.5.10.3	JSSG-2009 Appendix A: A.3.4.1.5.8.1, A.4.4.1.5.8.1, A.3.4.1.5.4, A.4.4.1.5.4, AFGS-87139: 3.2.6.1, 3.2.6.2	23.729, 25.729
8.5.10.4	JSSG-2009 Appendix A: A.3.4.1.5.8.1, A.4.4.1.5.8.1, AFGS-87139: 3.2.6.1, 3.2.6.2	23.729, 25.729
8.5.10.5	JSSG-2009 Appendix A: A.3.4.1.5.5.1, A.4.4.1.5.5.1, A.3.4.1.5.5.2, A.4.4.1.5.5.2, AFGS-87139: 3.2.6.3	23.729, 25.729, 25.1515, 25.1583
8.5.10.6	JSSG-2009 Appendix A: A.3.4.1.5.7, A.4.4.1.5.7, AFGS-87139: 3.2.6.3	23.729, 25.729, 25.1515, 25.1583
8.5.10.7	JSSG-2009 Appendix A: A.3.4.1.5.9.1, A.4.4.1.5.9.1, A.3.4.1.5.1, A.4.4.1.5.1, AFGS-87139: 3.2.6.4	23.729, 25.729
8.5.10.8	JSSG-2009 Appendix A: A.3.4.1.5.9.2, A.4.4.1.5.9.2, A.3.4.1.5.1, A.4.4.1.5.1, AFGS-87139: 3.2.6.4	No applicable reference available.
8.5.10.9	JSSG-2009 Appendix A: A.3.4.1.5.10, A.4.4.1.5.10, A.3.4.1.5.1, A.4.4.1.5.1, AFGS-87139: 3.2.6.4	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.5.10.10	JSSG-2009: 3.2.7.4.4.2, 4.2.7.4.42; and Appendix A: A.3.4.1.5.3, A.4.4.1.5.3, AFGS-87139: 3.2.6.1, 3.2.6.2	23.729, 25.729
8.5.11 Auxiliary deceleration devices	AFGS-87139: 3.2.7	
8.5.11.1	JSSG-2009 Appendix A: A.3.4.1.8.1.1 thru A.3.4.1.8.1.8, A.4.4.1.8.1.1 thru A.4.4.1.8.1.8, MIL-A-18717, MIL-A-83136, SAE ARP-1538	No applicable reference available.
8.5.11.2	JSSG-2009 Appendix A: A.3.4.1.8.1.1 thru A.3.4.1.8.1.8, A.4.4.1.8.1.1 thru A.4.4.1.8.1.8, MIL-A-18717, MIL-A-83136, SAE ARP-1538, AFGS-87139: 3.2.7.1	No applicable reference available.
8.5.11.3	JSSG-2009 Appendix A: A.3.4.1.8.5 thru A.3.4.1.8.8, A.4.4.1.8.5 thru A.4.4.1.8.8, MIL-A-18717, MIL-A-83136, SAE ARP-1538, AFGS-87139: 3.2.7.1	No applicable reference available.
8.5.11.4	MIL-A-18717, MIL-A-83136, SAE ARP-1538, AFGS-87139: 3.2.7.1	No applicable reference available.
8.5.11.5	JSSG-2009 Appendix A: A.3.4.1.8.2, A.4.4.1.8.2, AFGS-87139: 3.2.7.2	No applicable reference available.
8.5.11.6	AFGS-87139: 3.2.7.1, 3.2.7.2	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.5.12 Ground handling		23.471-23.511, 25.471-25.519
8.5.12.1	JSSG-2009 Appendix A: A.3.4.1.2.2.1.1, A.4.4.1.2.2.1.1, A.3.4.1.2.2.1.2, A.4.4.1.2.2.1.2, AFGS-87139: 3.2.8.1	23.507
8.5.12.2	NATO STANAG, AFGS-87139: 3.2.7.1	23.507, 25.519
8.5.12.3	JSSG-2009 Appendix A: A.3.4.1.2.2.1.3, A.4.4.1.2.2.1.3, A.3.4.1.2.2.1.5, A.4.4.1.2.2.1.5, AFGS-87139: 3.2.7.2	23.509, 25.509
8.5.12.4	JSSG-2009 Appendix A: A.3.4.1.2.2.1.4, A.4.4.1.2.2.1.4, AFGS-87139: 3.2.7.1	23.509, 25.519
8.5.12.5	JSSG-2009 Appendix A: A.3.4.1.2.2.1.6, A.4.4.1.2.2.1.6, AFGS-87139: 3.2.7.1	23.519
8.5.12.6	JSSG-2009 Appendix A: A.3.4.1.10.1 thru A.3.4.1.10.2, A.4.4.1.10.1 thru A.4.4.1.10.2, AFGS-87139: 3.2.9.1	23.737, 25.737
8.5.12.7	JSSG-2009: 3.2.7.4.4.1, 4.2.7.4.4.1; and Appendix A: A3.4.1.3.1.3, A.4.4.1.3.1.3; AFGS-87139: 3.5	23.471-23.511, 25.471-25.519, 25.1309
8.5.12.8	JSSG-2009 Appendix A: A.3.4.1.1.1, A.4.4.1.1.1, A.3.4.1.1.2, A.4.4.1.1.2, AFGS-87139: 3.2.1.2	23.473, 23.477, 23.485, 25.473, 25.477, 25.485
8.5.12.9	JSSG-2009 Appendix A: A.3.4.1.2.3, A.4.4.1.2.3, AFGS-87139: 3.2.1.1, 3.2.1.2, 3.2.1.3	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.5.12.10	AFGS-87139: 3.2.1.1, 3.2.1.2, 3.2.1.3	23.471-23.511, 25.471-25.519
8.5.12.11	AFGS-87139: App B	23.471-23.511, 25.471-25.519, 25.1309
8.5.12.12	AFGS-87139: 3.2.1.1, 3.2.1.2, 3.2.1.3	25.1309, 25.571
8.5.12.13	AFGS-87139: 3.2.1.1, 3.2.1.2, 3.2.1.3	25.1309, 25.571
8.5.12.14	JSSG-2001: 3.4.3.2.1.6.1.3, 4.4.3.2.1.6.1.3	No applicable reference available.
8.6 Auxiliary/emergency power system(s) (APS/EPS).	JSSG-2009 Appendix C	23.901-23.1203, 25.901-25.1207, TSO C77b, AC 20-128, AC 120-42A  (Note: FAR paragraphs listed in the following section are not necessarily sufficient to fully satisfy the corresponding criteria.)
8.6.1	JSSG-2009: 3.2.7 - 3.2.7.6.5, 4.2.7 - 4.3.7.6.5	TSO C77b
8.6.2	JSSG-2009 Appendix C: C.3.4.3, C.4.4	23.901, 25.901, 25.903 (f), TSO C77b 4.4.1 - 4.5.2
8.6.2.1	JSSG-2009 Appendix C: C.3.4.3.12.1, C.4.4.3.12.1	TSO C77b 4.6.2
8.6.3	JSSG-2009 Appendix C: C.3.4.3, C.4.4.3	23.901, 25.901, 25.903 (f), TSO C77b 4.4.1 - 4.5.2, Sections 6 and 7
8.6.4	JSSG-2009 Appendix C: C.3.4.3.10.1, C.4.4.3.10.1	23.903 (b), 23.1461, 25.901(c), 25.901 (b), 25.1461, AC 20-128, TSO C77b: 5.9, 6.6, 6.7, 6.8
8.6.4.1	JSSG-2009 Appendix C: C.3.4.3.10.1, C.4.4.3.10.1	25.901 (c), 25.1167 (a), (c)
8.6.5	JSSG-2009 Appendix C: C.3.4.3.10.2, C.4.4.3.10.2	25.901 (c), 25.903 (f), TSO C77b 5.10
8.6.5.1	JSSG-2009 Appendix C: C.3.4.3.10.2, C.4.4.3.10.2	25.1167 (a), (c)

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.6.6	JSSG-2009 Appendix C: C.3.4.3.4, C.4.4.3.4	23.943, 25.901 (f), 25.943, TSO C77b: 4.1, 4.4.1, 4.4.2, 4.4.3, 4.7
8.6.7.a	JSSG-2009: 3.2.7, 4.2.7, 3.2.7.4.4, 4.2.7.4.4, 3.2.7.5, 4.2.7.5	25.901 (c), (d), TSO C77b: 4.8, 5.1.3, 5.2.5
8.6.7.b	JSSG-2009: 3.3.8, 4.3.8	23.993, 23.1017, 25.901 (c), 25.993, 25.1017
8.6.7.c	JSSG-2009: 3.3.8, 4.3.8	25.1187, TSO C77b: 5.27, 5.42, 5.52
8.6.7.d	JSSG-2009: 3.3.8, 4.3.8	23.1041 - 23.1045, 23.1103 (a), 25.1041 - 25.1045, 25.1103 (a), TSO C77b (5.3)
8.6.7.e	JSSG-2009: 3.3.3, 4.3.3, 3.3.8, 4.3.8; and Appendix G: G.3.4.7, G.4.4.7	23.1181 - 23.1203, 25.1181 - 25.1207, TSO C77b (5.2)
8.6.7.f	JSSG-2009: 3.2.6, 4.2.6	23.901, 23.1021, 25.901, 25.1021
8.6.8	JSSG-2009 Appendix C: C.3.4.3.11, C.4.4.3.11	23.1091, 23.1103, 23.1121, 23.1123, 25.1091, 25.1103, 25.1121, 25.1123, TSO C77b: 5.3.1, 5.3.3, 5.6
8.6.9	JSSG-2009: 3.3.3, 4.3.3	23.1541, 23.1581 (a) (2), 25.1541, 25.1581 (a) (2)
8.6.10	JSSG-2009: 3.2.7, 4.2.7, 3.2.7.4.4, 4.2.7.4.4, 3.2.7.5, 4.2.7.5	25.1167
8.6.11	JSSG-2009: 3.3.3, 4.3.3	25.901 (c), TSO C77b (5.1)
8.6.12	JSSG-2009 Appendix C: C.3.4.3.8, C.4.4.3.8	23.1141 - 23.1142, 23.1549, 25.1141 - 25.1142, 25.1549

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.6.13	JSSG-2009: 3.2.7.4.4, 4.2.7.4.4, 3.2.7.6, 4.2.7.6	23.1522, 23.1549, G23.3, 25.1522, 25.1549, H25.3, TSO C77b: 4.3, 4.4.1, 4.6.1, 5.7
8.6.14	JSSG-2000: 3.6.2	23.1581 - 23.1585, G23.3 - G23.4, 25.1581 - 25.1585, H25.3 - H25.4
8.7 Aerial refueling system.		Note: FAR paragraphs listed in the following section are not necessarily sufficient to fully satisfy the corresponding criteria.
8.7.1	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.1.1	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2, 3.6.2	Note: Use FAR sections corresponding to Structural and Installation requirements. Use all systems FARs as applicable, i.e., Electrical.
8.7.1.2	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.1.2.1	JSSG-2006: 3.3.11, 4.3.11 JSSG-2010: 3.5.3.3, 4.5.3.3	No applicable reference available.
8.7.1.3	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2, JSSG-2009 Appendix F: F.3.4.6.2.2.5, F.4.4.6.2.2.5, F.3.4.6.2.3.5, F.4.4.6.2.3.5, JSSG-2006: 3.4.1.7, 4.4.1.7	No applicable reference available.
8.7.1.4	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.1.4.1	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.1.4.2	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2  JSSG-2010: 3.5.3.3, 4.5.3.3	No applicable reference available.
8.7.1.4.3	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2  JSSG-2010: 3.5.3.3, 4.5.3.3	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.7.1.4.4	JSSG-2010: 3.5.3.3.1, 4.5.3.3.1, 3.5.3.5, 4.5.3.5	No applicable reference available.
8.7.1.4.5	JSSG-2010: 3.5.3.2.1, 4.5.3.2.1, 3.5.3.3, 4.5.3.3	23.951-23.1001, 25.951- 25.1001
8.7.1.4.6	JSSG 2009: 3.2.7.2, 4.2.7.2	25.1381  (Note: Use FAR sections corresponding to structural and installation requirements. Use all systems FAR's as applicable, i.e., electrical.)
8.7.1.5	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.1.6	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.1.7	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.1.8	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.1.8.1	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.1.9	JSSG-2001: 3.2.3	No applicable reference available.
8.7.1.9.1	JSSG-2001: 3.2.3, 3.3.10 JSSG-2009 Appendix F: F.3.4.6.2.2.2, F.4.4.6.2.2.2, F.3.4.6.2.3.2, F.4.4.6.2.3.2	No applicable reference available.
8.7.1.9.2	JSSG-2001: 3.2.3, 3.3.10 JSSG-2009 Appendix F: F.3.4.6.2.2.2, F.4.4.6.2.2.2, F.3.4.6.2.3.2, F.4.4.6.2.3.2	No applicable reference available.
8.7.1.10	JSSG-2001: 3.1.1.1.1, 3.3.11.1.1.1	No applicable reference available.
8.7.1.11	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.1.12	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.7.1.13	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.1.14	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.1.15	JSSG-2001: 3.2.3	No applicable reference available.
8.7.1.16	JSSG-2001: 3.2.3, JSSG-2009 Appendix F: F.3.4.6.2.2.2, F.4.4.6.2.2.2, F.3.4.6.2.3.2, F.4.4.6.2.3.2	No applicable reference available.
8.7.1.17	JSSG-2001: 3.1.1.1.1, 3.3.11.1.1.1	No applicable reference available.
8.7.2	JSSG-2009: 3.2.7.4.4.1, 4.2.7.4.4.1, 3.2.7.4.4.2, 4.2.7.4.4.2, 3.3.8, 4.3.8	No applicable reference available.
8.7.2.1	JSSG-2009 Appendix F: F.3.4.6.1.7, F.4.4.6.1.7	No applicable reference available.
8.7.2.1.1	JSSG-2009: 3.3.8, 4.3.8; and Appendix F: F.3.4.6.2.2.4, F.4.4.6.2.2.4	No applicable reference available.
8.7.2.1.2	JSSG-2009: 3.3.8, 4.3.8; and Appendix F: F.3.4.6.2.2.3, F.4.4.6.2.2.3	No applicable reference available.
8.7.2.1.3	JSSG-2009: 3.3.8, 4.3.8; and Appendix F: F.3.4.6.2.3.3, F.4.4.6.2.3.3	No applicable reference available.
8.7.2.1.4	JSSG-2009: 3.3.8, 4.3.8; and Appendix F: F.3.4.6.2.3.3, F.4.4.6.2.3.3	No applicable reference available.
8.7.2.1.5	JSSG-2009: 3.3.8, 4.3.8	No applicable reference available.
8.7.2.1.6	JSSG-2009: 3.3.8, 4.3.8	No applicable reference available.
8.7.2.1.7	JSSG-2009: 3.3.3, 4.3.3 Appendix F: 3.4.6.1.7, 4.4.6.1.7 Appendix G: 3.4.7.23, 4.4.7.23	No applicable reference available.



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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.7.2.1.8	JSSG-2009 Appendix E: E.3.4.5.6.11, E.4.4.5.6.11; and Appendix F: F.3.4.6.1.6, F.4.4.6.1.6, F.3.4.6.1.7, F.4.4.6.1.7	No applicable reference available.
8.7.2.1.9	JSSG-2001: 3.2.3	No applicable reference available.
8.7.2.1.10	JSSG-2001: 3.2.1, 3.3.10.1.1 JSSG-2009 Appendix G: 3.4.7.6, 4.4.7.6	23.954, 25.954
8.7.2.2	JSSG-2001: 3.3.11.1.1.1	No applicable reference available.
8.7.2.2.1	JSSG-2001: 3.3.11.1.1.1	No applicable reference available.
8.7.2.2.2	JSSG-2009 Appendix F: 3.4.6.1.1, 4.4.6.1.1 3.4.6.1.2, 4.4.6.1.2	25.1309
8.7.2.3	JSSG-2009 Appendix F: F.3.4.6.2.2.2, F.4.4.6.2.2.2, F.3.4.6.2.3.2, F.4.4.6.2.3.2	No applicable reference available.
8.7.2.4	JSSG-2009: 3.2.9, 4.2.9	No applicable reference available.
8.7.3	JSSG-2001: 3.3.11.1.1.1	No applicable reference available.
8.7.3.1	JSSG-2009 Appendix F: F.3.4.6.1.5, F.4.4.6.1.5	No applicable reference available.
8.7.4	JSSG-2009: 3.1, 4.1; and Appendix F: F.3.4.6, F.4.4.6	No applicable reference available.
8.7.4.1	JSSG-2009 Appendix F: F.3.4.6.1.3, F.4.4.6.1.3	No applicable reference available.
8.7.4.2	JSSG-2009 Appendix F: F.3.4.6.2.2.7, F.4.4.6.2.2.7, F.3.4.6.2.3.1.2, F.4.4.6.2.3.1.2	No applicable reference available.
8.7.4.3	JSSG-2010: 3.2.14, 4.2.14	No applicable reference available.
8.7.4.4	JSSG-2010: 3.2.13, 4.2.13	No applicable reference available.
8.7.4.5	JSSG-2010: 3.5.2.1.2, 4.5.2.1.2	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.7.5	JSSG-2009 Appendix F: F.3.4.6.1.1, F.4.4.6.1.1	No applicable reference available.
8.7.5.1	JSSG-2009 Appendix F: F.3.4.6.1.6, F.4.4.6.1.6	No applicable reference available.
8.7.5.2	JSSG-2009 Appendix F: F.3.4.6.1.6, F.4.4.6.1.6	No applicable reference available.
8.7.5.3	JSSG-2009 Appendix F: F.3.4.6.1.6, F.4.4.6.1.6	No applicable reference available.
8.7.5.4	JSSG-2001: 3.4.7.2.1, 3.4.7.2.2	No applicable reference available.
8.7.5.5	JSSG-2010: 3.3.2.1, 4.3.2.1	No applicable reference available.
8.7.5.6	JSSG-2009 Appendix F: F.3.4.6.1.1, F.4.4.6.1.1, F.3.4.6.1.5, F.4.4.6.1.5	No applicable reference available.
8.7.5.7	JSSG-2009 Appendix F: F.3.4.6.1.1, F.4.4.6.1.1	No applicable reference available.
8.7.5.8	JSSG-2009 Appendix F: F.3.4.6.1.1, F.4.4.6.1.1	No applicable reference available.
8.8 Propulsion installations.		23.901-23.1203, 25.901-25.1207, 23.1305, 25.1305, H25, AC 20-128  (Note: FAR paragraphs listed in the following section are not necessarily sufficient to fully satisfy the corresponding criteria.)
8.8.1	JSSG-2001: 3.3.1.1.1	23.901, 23.903, 25.901, 25.903, 23.1305, 25.1305
8.8.2	JSSG-2001: 3.3.1.1.1	23.901, 23.903, 25.901, 25.903, 25.939, 25.941
8.8.3	JSSG-2001: 3.3.1.1.1	23.1041 - 23.1045, 25.1041 - 25.1045, 25.1187
8.8.4	JSSG-2009: Appendix C.3.4.3.10.2, C.4.4.3.10.2	25.1167

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.8.5	JSSG-2001: 3.3.10, 3.3.5.1.1	23.901 (c), 23.903 (d), 23.905 (d), 25.901 (c), 25.903 (d), 25.905 (d), AC 20-128
8.8.6	JSSG-2001: 3.3.1.1.1	23.901, 23.925, 23.993, 25.901, 25.925, 25.993
8.8.7	JSSG-2001: 3.3.1.1.1, 3.3.10.1.2	23.901, 23.1021, 23.1187, 25.901, 25.1021, 25.1187
8.8.8	JSSG-2001: 3.3.1.1.2, 3.4.4, 3.4.4.1.5, 3.4.4.1.6	23.1141 - 23.1159, 25.1141 - 25.1159, 23.1305, 25.1305
8.8.9	JSSG-2001: 3.3.1.1.1.1	23.1091 - 23.1105, 25.1091 - 25.1105
8.8.10	JSSG-2001: 3.3.1.1.1, JSSG- 2006	23.305 - 23.307, 25.301, 25.105 - 25.307
8.8.11	JSSG-2001: 3.3.1.1.1.2	23.1121 - 23.1123, 25.1121 - 25.1123
8.8.12	JSSG-2001: 3.3.1.1.1.2	23.933, 25.933
8.8.13	JSSG-2000: 3.6.2	25.1581-25.1585, H25.4-H25.4
8.8.14	JSSG-2001: 3.1.5, 3.4.4.2.1.6.1	23.901 (b) (3), 25.901 (b) (3)
8.8.15	JSSG-2001: 3.5, JSSG-2000: 3.3.6	23.901, 23.903, 25.901, 25.903
8.8.16	JSSG-2001: 3.3.1.1.1.	23.101, 23.105 - 23.125, 25.101, 25.105 - 25.125
8.9 Mechanisms		
8.9.1	JSSG 2009, Appendix I, 3.4.9.1, 3.4.9.4	No applicable reference available.
8.9.2	JSSG 2009, Appendix I, 3.4.9.1, 3.4.9.4	No applicable reference available.
8.9.3	JSSG 2009, Appendix I, 3.4.9.1, 3.4.9.4	No applicable reference available.
8.9.4	JSSG 2009, Appendix I, 3.4.9.1.3, 3.4.9.4, 3.4.9.3,	No applicable reference available.
8.9.5	JSSG 2009, Appendix I, 3.4.9.1.3, 3.4.9.4	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.9.6	JSSG 2009, Appendix I, 3.4.9.1, 3.4.9.4	No applicable reference available.
8.9.7	JSSG 2009, Appendix I, 3.4.9.1, 3.4.9.4	No applicable reference available.
8.9.8	JSSG 2009, Appendix I, 3.4.9.1, 3.4.9.4	No applicable reference available.
8.9.9	JSSG 2009, Appendix I, 3.4.9.1, 3.4.9.4.11	No applicable reference available.
8.9.10	JSSG 2009, Appendix I, 3.4.9.1.10, 3.4.9.4	No applicable reference available.
8.9.11	JSSG 2009, Appendix I, 3.4.9.1.10, 3.4.9.4	No applicable reference available.
8.9.12	JSSG 2009, Appendix I, 3.4.9.1.10, 3.4.9.4	No applicable reference available.
8.9.13	JSSG 2009, Appendix I, 3.4.9.1.10, 3.4.9.4	No applicable reference available.
8.9.14	JSSG 2009, Appendix I, 3.4.9.1.10, 3.4.9.4	No applicable reference available.
8.9.15	JSSG 2009, Appendix I, 3.4.9.1.10, 3.4.9.4	No applicable reference available.
8.9.16	JSSG 2009, Appendix I, 3.4.9.1.10, 3.4.9.4	No applicable reference available.
8.9.17	JSSG 2009, Appendix I, 3.4.9.1.10, 3.4.9.4	No applicable reference available.
8.9.18	JSSG 2009, Appendix I, 3.4.9.1.10, 3.4.9.4	No applicable reference available.
8.9.19	JSSG 2009, Appendix I, 3.4.9.1.10, 3.4.9.4	No applicable reference available.
8.9.20	JSSG 2009, Appendix I, 3.4.9.1.10, 3.4.9.4	No applicable reference available.
8.9.21	JSSG 2009, Appendix I, 3.4.9.1.10, 3.4.9.4	No applicable reference available.
8.10 External cargo hook systems (rotary wing).		
8.10.1	Refer to technical point of contact for this discipline (listed in section A.20).	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
8.10.2	Refer to technical point of contact for this discipline (listed in section A.20).	No applicable reference available.
8.10.3	Refer to technical point of contact for this discipline (listed in section A.20).	No applicable reference available.
8.10.4	Refer to technical point of contact for this discipline (listed in section A.20).	No applicable reference available.
8.11 External rescue hoist (rotary wing).		
8.11.1	Refer to technical point of contact for this discipline (listed in section A.20).	No applicable reference available.
8.11.2	Refer to technical point of contact for this discipline (listed in section A.20).	No applicable reference available.
8.11.3	Refer to technical point of contact for this discipline (listed in section A.20).	No applicable reference available.
8.12 Fast rope insertion/extraction system (FRIES) (rotary wing)		
8.12.1	Refer to technical point of contact for this discipline (listed in section A.20).	No applicable reference available.
8.12.2	Refer to technical point of contact for this discipline (listed in section A.20).	No applicable reference available.

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**A.9. Crew Systems**

<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
9. Crew Systems	JSSG-2010 Crew Systems	AC 20-41A, AC 20-60
9.1 Escape and egress system.		
9.1.1	JSSG-2001: 3.3.10.2.3, 3.4.4.1.3, JSSG-2010: 3.8, 4.8, 3.9, 4.9, 3.11, 4.11, 3.12, 4.12, 3.13, 4.13, 3.14, 4.14	23.803-23.815, 25.801- 25.819, 23.1411, 23.1415, 25.1411, 25.1415
9.1.2	JSSG-2001: 3.3.10.2.3, JSSG-2010: 3.8, 4.8, 3.9, 4.9, 3.11, 4.11, 3.12, 4.12, 3.13, 4.13, 3.14, 4.14	23.803-23.815, 25.801- 25.819, 23.1411, 23.1415, 25.1411, 25.1415
9.1.3	JSSG-2001: 3.3.10.2.3, JSSG-2010: 3.8, 4.8, 3.9, 4.9, 3.11, 4.11, 3.12, 4.12, 3.13, 4.13, 3.14, 4.14	23.803-23.815, 25.801- 25.819, 23.1411, 23.1415, 25.1411, 25.1415
9.1.4	JSSG-2001: 3.3.10.2.3, JSSG-2010: 3.8, 4.8, 3.9, 4.9, 3.11, 4.11, 3.12, 4.12, 3.13, 4.13, 3.14, 4.14	23.803-23.815, 25.801- 25.819, 23.1411, 23.1415, 25.1411, 25.1415
9.1.5	JSSG-2001: 3.3.10.2.3, JSSG-2010: 3.8, 4.8, 3.9, 4.9, 3.11, 4.11, 3.12, 4.12, 3.13, 4.13, 3.14, 4.14	23.803-23.815, 25.801- 25.819, 23.1411, 23.1415, 25.1411, 25.1415
9.1.6	No information available in current JSSG. Information to be included in next revision of JSSG.	121.309, 121.310
9.2 Crew station layout.		23.771-23.775, 25.771- 25.773, 23.803-23.815, 25.801-25.81923.1411, 23.1415, 25.1411, 25.1415
9.2.1	JSSG-2010: 3.1, 4.1, 3.2, 4.2, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.14, 4.14	23.777, 25.777
9.2.1.1	JSSG-2010: 3.1, 4.1, 3.2, 4.2, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.14, 4.14	23.777, 25.777

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
9.2.1.2	JSSG-2010: 3.1, 4.1, 3.2, 4.2, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.14, 4.14	23.771-23.781, 25.771-25.781
9.2.2	JSSG-2010: 3.1, 4.1, 3.2, 4.2, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.14, 4.14	23.771-23.781, 25.771-25.781
9.2.3	JSSG-2010: 3.1, 4.1, 3.2, 4.2, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.14, 4.14	23.1321, 25.1321
9.2.3.1	JSSG-2010: 3.1, 4.1, 3.2, 4.2, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.14, 4.14	23.1322, 25.1322
9.2.4	JSSG-2010: 3.1, 4.1, 3.2, 4.2, 3.3, 4.3, 3.4, 4.4, 3.9.7, 3.14, 4.14	23.1322, 25.1322
9.2.5	JSSG-2010: 3.1, 4.1, 3.2, 4.2, 3.3, 4.3, 3.4, 4.4, 3.5, 4.5, 3.14, 4.14	No applicable reference available.
9.3 Air vehicle lighting.		AC 20-30B, AC 20-30A, 23.1381-23.1401, 25.1381-25.1403
9.3.1	JSSG-2010-5	23.1381-23.1401, 25.1381-25.1403
9.3.2	JSSG-2010-5	23.1381-23.1401, 25.1381-25.1403
9.3.3	JSSG-2010-5	23.1381-23.1401, 25.1381-25.1403
9.3.4	JSSG-2010-5	23.1381-23.1401, 25.1381-25.1403
9.4 Human performance.	MIL-STD-1472F: Human Factors Engineering	23.1311-23.1322, 25.1321-25.1322
9.4.1	JSSG-2010: 3.1, 4.1, 3.2, 4.2	23.1311-23.1322, 25.1321-25.1322
9.4.1.1	JSSG-2010-3: 3.2, 4.2	23.1311-23.1322, 25.1321-25.1322

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
9.4.2	JSSG-2010: 3.1, 4.1, 3.2, 4.2	23.1581-23.1589, 25.1581-25.1587
9.4.3	JSSG-2010: 3.1, 4.1, 3.2, 4.2	23.1581-23.1589, 25.1581-25.1587
9.4.4		
9.5 Life support systems.		
9.5.1	JSSG-2010: 3.6, 4.6, 3.9, 4.9, 3.10, 4.10, 3.13, 4.13	23.1301, 23.1441, 25.1301, 25.1441
9.5.2	JSSG-2010: 3.6, 4.6, 3.9, 4.9, 3.10, 4.10, 3.13, 4.13	23.1301, 23.1441, 25.1301, 25.1441
9.5.3	JSSG-2010: 3.6, 4.6, 3.9, 4.9, 3.10, 4.10, 3.13, 4.13	23.1301, 23.1441, 25.1301, 25.1441
9.6 Transparency integration.		
9.6.1	JSSG-2010-14: 3.14, 4.14	23.775, 25.775
9.6.2	JSSG-2010-14: 3.14, 4.14	23.775, 25.775
9.6.3	JSSG-2010-14: 3.14, 4.14	23.775, 25.775
9.6.4	JSSG-2010-14: 3.14, 4.14	23.775, 25.775
9.6.5	JSSG-2010-14: 3.14, 4.14	23.775, 25.775
9.6.6	JSSG-2010-14: 3.14, 4.14	23.775, 25.775
9.6.7	JSSG-2010-14: 3.14, 4.14	23.775, 25.775
9.6.8	JSSG-2010-14: 3.14, 4.14	23.775, 25.775
9.7 Crash survivability.	JSSG-2001: 3.3.10.2.2, JSSG-2010: 3.7, 4.7, 3.13, 4.13	23.561, 23.562, 25.561, 25.562, 25.563
9.7.1	JSSG-2001: 3.3.10.2.2, JSSG-2010: 3.7, 4.7, 3.13, 4.13	23.561, 23.562, 25.561, 25.562, 25.563
9.7.2	Refer to technical point of contact for this discipline (listed in section A.20).	Refer to technical point of contact for this discipline (listed in section A.20).
9.7.3	JSSG-2001: 3.3.10.2.2, JSSG-2010: 3.7, 4.7, 3.13, 4.13	23.561, 23.562, 25.561, 25.562, 25.563



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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
9.7.4	JSSG-2001: 3.3.10.2.2, JSSG-2010: 3.7, 4.7, 3.13, 4.13	23.561, 23.562, 25.561, 25.562, 25.563
9.7.5	JSSG-2001: 3.3.10.2.2, JSSG-2010: 3.7, 4.7, 3.13, 4.13	Refer to technical point of contact for this discipline (listed in section A.20).
9.7.6	JSSG-2001: 3.3.10.2.2, JSSG-2010: 3.7, 4.7, 3.13, 4.13	23.561, 23.562, 25.561, 25.562, 25.563
9.7.7	JSSG-2001: 3.3.10.2.2, JSSG-2010: 3.7, 4.7, 3.13, 4.13	23.561, 23.562, 25.561, 25.562, 25.563
9.7.8	JSSG-2001: 3.3.10.2.2, JSSG-2010: 3.7, 4.7, 3.13, 4.13	25.851
9.7.9	JSSG-2001: 3.3.10.2.2, JSSG-2010: 3.7, 4.7, 3.13, 4.13	23.561, 23.562, 25.561, 25.562, 25.563
9.7.10	JSSG-2001: 3.3.10.2.2, JSSG-2010: 3.7, 4.7, 3.13, 4.13	No applicable reference available.
9.7.11	JSSG 2001: 3.3.10.2.1, 4.3.10.2.1 JSSG 2010-7: 3.7.3.2.1	FAR 27.562
9.7.12	MIL-STD-1472: 5.5, 5.6 JSSG 2001: 3.4.3, 4.4.3 JSSG 2010-9: 3.9.5, 4.9.5 JSSG 2010-13: 3.13.6, 4.13.16	FAR 25.811
9.8 Air transportability and airdrop.		
9.8.1	JSSG-2000: 3.1.7.2, JSSG-2001: 3.4.5, 3.4.6	No applicable reference available.
9.8.2	JSSG-2000: 3.1.7.2, JSSG-2001: 3.4.5, 3.4.6	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
9.8.3	JSSG-2000: 3.1.7.2, JSSG-2001: 3.4.5, 3.4.6	No applicable reference available.
9.8.4	JSSG-2000: 3.1.7.2, JSSG-2001: 3.4.5, 3.4.6	No applicable reference available.
9.8.5	JSSG-2000: 3.1.7.2, JSSG-2001: 3.4.5, 3.4.6	No applicable reference available.
9.8.6	JSSG-2000: 3.1.7.2, JSSG-2001: 3.4.5, 3.4.6	No applicable reference available.
9.8.7	JSSG-2000: 3.1.7.2, JSSG-2001: 3.4.5, 3.4.6	No applicable reference available.
9.8.8	MIL-HDBK-1791: 4.2, 5.2, JSSG 2009: Appendix J	No applicable reference available.
9.8.9	MIL-HDBK-1791: 4.2, 5.2, JSSG 2009: Appendix J	No applicable reference available.
9.8.10	MIL-HDBK-1791: 4.2, 5.2, JSSG 2009: Appendix J	No applicable reference available.
9.8.11	Document unavailable at this time. Refer to technical point of contact for this discipline (listed in section A20)	No applicable reference available.
9.8.12	Document unavailable at this time. Refer to technical point of contact for this discipline (listed in section A20)	No applicable reference available.
9.8.13	MIL-HDBK-1791: 4.2, 5.2, JSSG 2009: Appendix J	No applicable reference available.

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**A.10. Diagnostics**

<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
10. Diagnostics Systems		
10.1 Failure modes.		
10.1.1	JSSG-2000: 3.3.2, JSSG-2001: 3.3.7, 3.3.7.1	23.1301, 23.1309, 23.1351, 25.1301, 25.1309, 25.1351
10.1.2	JSSG-2000: 3.3.2, JSSG-2001: 3.3.7, 3.3.7.1	23.1301, 23.1309, 23.1351, 25.1301, 25.1309, 25.1351
10.2 Operation.		
10.2.1	JSSG-2000: 3.3.2, JSSG-2001: 3.3.7, 3.3.7.1, 3.4.4.1.6	23.1301, 23.1309, 23.1351, 25.1301, 25.1309, 25.1351
10.2.2	JSSG-2000: 3.3.2, JSSG-2001: 3.3.7, 3.3.7.1	23.1301, 23.1309, 23.1351, 25.1301, 25.1309, 25.1351
10.2.3	JSSG-2000: 3.3.2, JSSG-2001: 3.3.7, 3.3.7.1	23.1301, 23.1309, 23.1351, 25.1301, 25.1309, 25.1351
10.2.4	JSSG-2000: 3.3.6, JSSG-2001: 3.3.7, 3.4.4.1.6	23.1301, 23.1309, 23.1351, 25.1301, 25.1309, 25.1351
10.2.5	JSSG-2000: 3.6.2	23.1301, 23.1309, 23.1351, 25.1301, 25.1309, 25.1351

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### A.11. Avionics

CERTIFICATION CRITERIA	SUPPORT DOCUMENTATION	FEDERAL AVIATION REGULATIONS
11. Avionics	JSSG-2005 Avionics	
11.1 Avionics architecture.		
11.1.1	MIL-HDBK-87213 sect. 3.1	23.1301, 23.1309, 25.1301, 25.1309, RTCA DO-200A
11.1.1.a	MIL-STD-1787: 4.1.1	23.1323, 23.1325, 23.1326, 25.1323, 25.1325, 25.1326
11.1.1.b	MIL-STD-1787: 4.1.1	23.1305, 23.1337, 25.1305, 25.1337
11.1.1.c	MIL-HDBK-87213 sect. 3.1	23.1301, 23.1309, 23.1351d, 25.1301, 25.1309, 25.1351d
11.1.1.d	JSSG-2005: 3.2.1.6 and 4.2.1.6, AFI 11-202 Vol 3: 2.6.2 AMCP 706-203 Engineering Design Handbook for Army Aircraft	RTCA DO-219, RTCA SC-189, AC 20-DC
11.1.1.e	JSSG-2005: 3.2.1.5 and 4.2.1.5, AFI 11-202 Vol 3: 2.6.2	25.1303, AC 90-96, RTCA DO-236, RTCA DO-200A
11.1.1.f	JSSG-2005: 3.2.1.6 and 4.2.1.6, AFI 11-202 Vol 3: 5.4.2	RTCA DO-212, RTCA DO-181, TSO C112, AC 20-131A, TSO C151a,
11.1.2	JSSG-2005: 3.2.1.4.1, 4.2.1.4.1	23.1309, 23.1311, 23.1331, 25.1309, 25.1331
11.1.3.a	JSSG-2005: 3.2.2, 4.2.2	23.1301, 23.1309, 25.1301, 25.1309
11.1.3.b	JSSG-2005: 3.2.2, 4.2.2	23.1301, 23.1309, 23.1311, 25.1301, 25.1309

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
11.1.3.c	JSSG-2005: 3.2.2, 4.2.2	23.1301, 23.1309, 25.1301, 25.1309
11.1.4	JSSG-2005: 3.2.1.3, 4.2.1.3	23.1301, 23.1309, 23.1331, 25.1301, 25.1309, 25.1331
11.1.5.	JSSG-2005: 3.3.5, 4.3.5	23.1301, 23.1309, 23.1329, 23.1335, 25.1301, 25.1309, 25.1329, 25.1335
11.1.5.a	JSSG-2005: 3.2.1.3.2, 4.2.1.3.2	23.1309, 25.1309
11.1.5.b	JSSG-2005: 3.2.1.3.2, 4.2.1.3.2	23.1309, 25.1309
11.1.5.c	JSSG-2005: 3.2.2.2, 4.2.2.2, 3.2.2.3, 4.2.2.3	23.1309, 25.1309
11.1.6	JSSG-2005: 3.2.1.3.2, 4.2.1.3.2	23.1309, 25.1309
11.2 Avionics subsystems.		
11.2.1.a	AFI 11-202 Vol 3: 2.6, 2.6.1, 2.6. 1. 1, 2.6.1.2, 2.6.1.2.1, JSSG-2005: 3.2.1.8, 4.2.1.8, 3.2.1.8.1, 4.2.1.8.1, MIL-HDBK-87213: 3.2	23.1301, 23.1309, 23.1351, 25.1301, 25.1309, 25.1351 23.1311, 23.1321, 25.1321
11.2.1.b	MIL-HDBK-87213: 3.2.1.25.4.1 and App A	23.1311, 23.1323, 23.1325, 23.1326, 23.1327, 25.1323, 25.1325, 25.1326, 25.1327
11.2.1.c	JSSG-2005: 3.2.1.8.5, 4.2.1.8.5, MIL-HDBK-87213	23.1311, 23.1322, 25.1322
11.2.1.d	MIL-STD-1787: 4.2, MIL-HDBK-87213 App. A	23.1321, 23.1541, 25.1321, 25.1541
11.2.1.e	JSSG-2005: 3.2.1.3.2, 4.2.1.3.2	23.1309, 25.1309
11.2.2	JSSG-2005: 3.2.1.8.6, 4.2.1.8.6	25.777

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
11.2.3.a	JSSG-2005: 3.2.2, 4.2.2	23.1301, 23.1309, 25.1301, 25.1309
11.2.3.b	JSSG-2005: 3.2.2, 4.2.2	23.1301, 23.1309, 25.1301, 25.1309
11.2.4	JSSG-2005: 3.2.3, 4.2.3	23.1309, 25.1309
11.2.5	JSSG-2005: 3.2.2.5, 4.2.2.5	23.1351, 25.1351
11.3. Avionics air vehicle installation.		
11.3.1	JSSG-2005: 3.2.3, 4.2.3, MIL-HDBK-87213: 3.2.3	23.1309, 23.1321, 25.1309, 25.1321
11.3.2	JSSG -2005: 3.2.2, 4.2.2	23.1501, 25.1501
11.3.3.a	JSSG-2005, 3.3.5, 4.3.5	23.1309
11.3.3.b	JSSG-2005, 3.3.5, 4.3.5	23.1309

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## APPENDIX

### A.12. Electrical Power

CERTIFICATION CRITERIA	SUPPORT DOCUMENTATION	FEDERAL AVIATION REGULATIONS
12. Electrical Power		
12.1 Power generation system.		
12.1.1	JSSG-2009 Appendix H: H.3.4.8.2, H.4.4.8.2	23.1351, 25.1351
12.1.2	JSSG-2009 Appendix H: H.3.4.8, H.4.4.8, H.3.4.8.4, H.4.4.8.4	23.1351-23.1367, 25.1351-25.1363
12.1.3	JSSG-2009 Appendix H: H.3.4.8, H.4.4.8, H.3.4.8.4, H.4.4.8.4, H.3.4.8.5, H.4.4.8.5	23.1351-23.1367, 25.1351-25.1363
12.1.4	JSSG-2009 Appendix H: H.3.4.8.1, H.4.4.8.1	23.1351-23.1367, 25.1351-25.1363
12.1.5	JSSG-2009 Appendix H: H.3.4.8, H.4.4.8	23.1351-23.1367, 25.1351-25.1363
12.1.6	JSSG-2009 Appendix H: H.6.4.2	23.1353, 25.1353
12.1.7	JSSG-2009 Appendix H: H.3.4.8, H.4.4.8, H.3.4.8.5, H.4.4.8.5	23.1351-23.1367, 25.1351-25.1363
12.1.8	JSSG-2009 Appendix H: H.3.4.8, H.4.4.8	23.1301, 23.1309, 25.1301, 25.1309
12.1.9	JSSG-2009 Appendix H: H.3.4.8, H.4.4.8	23.1301, 23.1309, 25.1301, 25.1309
12.1.10	JSSG 2009, App. H Para. 3.4.8.4, 3.4.8.5	23.1351-23.1367, 25.1351-25.1363, 25.1309, 25.1529
12.2 Electrical wiring system, including power distribution.		
12.2.1	JSSG-2009 Appendix H: H.6.4.1	23.1365, 25.1353
12.2.2	JSSG-2009 Appendix H: H.6.4.1	23.1365, 25.1353
12.2.3	JSSG-2009 Appendix H: H.3.4.8.5, H.4.4.8.5	23.1357, 25.1357

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
12.2.4	JSSG-2009 Appendix H: H.6.4.1	23.1301, 23.1309, 25.1301, 25.1309
12.2.5	JSSG-2009 Appendix H: H.6.4.1, 6.1	23.1301, 23.1309, 25.1301, 25.1309, 23.1351-23.1367, 25.1351-25.1363, 25.1309, 25.1529, SFAR 88
12.2.6	JSSG-2009 Appendix H: H.6.4.1, 6.1, SAE AS50881	23.1301, 23.1309, 25.1301, 25.1309, 23.1351-23.1367, 25.1351-25.1363, 25.1309, 25.1529, AC 43.13-1B, SFAR 88
12.2.7	JSSG 2009, Appendix H Paragraph 6.1	23.1351-23.1367, 25.1351- 25.1363, 25.1309, 25.1529, SFAR 88
12.2.8	JSSG 2009, Appendix H Paragraph 6.1	23.1351-23.1367, 25.1351- 25.1363, 25.1309, 25.1529, SFAR 88



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## APPENDIX

### A.13. Electromagnetic Environmental Effects (E<sup>3</sup>)

CERTIFICATION CRITERIA	SUPPORT DOCUMENTATION	FEDERAL AVIATION REGULATIONS
13. Electromagnetic Environmental Effects (E <sup>3</sup> )	MIL-STD-464	
13.1 Component/subsystem E <sup>3</sup> qualification.		
13.1.1	MIL-STD-464: 5.6	RTCA DO-160
13.1.2	MIL-STD-464: 5.6, 5.3	RTCA DO-160
13.1.3	MIL-STD-464: 5.6, 5.4	RTCA DO-160
13.2 System-level E <sup>3</sup> qualification.		
13.2.1	MIL-STD-464: 5.2	23.1301, 23.1309, 25.1301, 25.1353, 25.1431
13.2.1.1	MIL-STD-464: 5.3	23.1301, 23.1309, 25.1301, 25.1353, 25.1431
13.2.1.2	MIL-STD-464: 5.2	23.1301, 23.1309, 25.1301, 25.1353, 25.1431
13.2.1.3	MIL-STD-464: 5.2	23.1301, 23.1309, 25.1301, 25.1353, 25.1431
13.2.1.4	MIL-STD-464: 5.2	
13.2.2	MIL-STD-464: 5.4	23.867, 23.954, 23.1301, 25.581, 25.954, 25.1301, 25.1316
13.2.3	MIL-STD-464: 5.4	23.867, 23.954, 23.1301, 25.581, 25.954, 25.1301, 25.1316
13.2.4	MIL-STD-464: 5.7	23.1301, 23.1309, 25.1301, 25.1309
13.2.5	MIL-STD-464: 5.10	23.1301, 23.1309, 25.1301, 25.1309
13.2.6	JSSG 2005, Section 3.3.3 MIL-STD-464: 5.8	Refer to technical point of contact for this discipline (listed in section A.20).
13.2.7	JSSG 2005, Section 3.3.3	Refer to technical point of contact for this discipline (listed in section A.20).

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### A.14. Safety

CERTIFICATION CRITERIA	SUPPORT DOCUMENTATION	FEDERAL AVIATION REGULATIONS
14. Safety		
14.1 System safety program.		
14.1.1	MIL-STD-882D: 1.1, 4.1, 4.2, 4.3, 4.4, 4.5	Included in each specific FAR per section.
14.1.1.1	MIL-STD-882D: 4.1	Included in each specific FAR per section.
14.1.1.2	MIL-STD-882D: 4.1, 4.2, 4.3, 4.4, 4.5	Included in each specific FAR per section.
14.1.1.3	MIL-STD-882D: 4.1, 4.2, 4.3, 4.4, 4.5	Included in each specific FAR per section.
14.1.1.4	MIL-STD-882D: 1.1, 4.1, 4.2, 4.3, 4.4, 4.5	Included in each specific FAR per section.
14.2 Safety requirements.		
14.2.1	MIL-STD-882D: 4.1, 4.2, 4.3, 4.4, 4.5, Appendix A	Included in each specific FAR per section.
14.2.2	MIL-STD-882D: 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, Appendix C	Included in each specific FAR per section.
14.2.3	MIL-STD-882D: 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, Appendix C	Included in each specific FAR per section.
14.2.4	MIL-STD-882D: 4, Appendix A.	Included in each specific FAR per section.
14.2.5	MIL-STD-882D: 4, Appendix A.	Included in each specific FAR per section.
14.2.6	MIL-STD-882D: 4, Appendix A.	Included in each specific FAR per section.
14.2.7	MIL-STD-882D: 4, Appendix A.	Included in each specific FAR per section.
14.2.8	MIL-STD-882D: 4, Appendix A.	Included in each specific FAR per section.
14.2.9	MIL-STD-882D: 4, Appendix A.	Included in each specific FAR per section.
14.3 Software safety program.	MIL-STD-882D, 4, Appendix A.	Included in each specific FAR per section

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
14.3.1	MIL-STD-882D, 4, Appendix A.	Included in each specific FAR per section
14.3.2	MIL-STD-882D, 4, Appendix A.	Included in each specific FAR per section
14.3.2.a	MIL-STD-882D, 4, Appendix A.	Included in each specific FAR per section
14.3.2.b	MIL-STD-882D, 4, Appendix A.	Included in each specific FAR per section
14.3.2.c	MIL-STD-882D, 4, Appendix A.	Included in each specific FAR per section
14.3.2.d	MIL-STD-882D, 4, Appendix A.	Included in each specific FAR per section
14.3.2.e	MIL-STD-882D, 4, Appendix A.	Included in each specific FAR per section
14.3.3	MIL-STD-882D, 4, Appendix A.	Included in each specific FAR per section

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**APPENDIX**

**A.15. Computer Resources**

<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
15. Computer Resources		
15.1 Air vehicle processing architecture.		
15.1.1	JSSG-2008: 3.1.12, 3.3.1	AC 20-115B, RTCA DO-178B
15.1.2	JSSG-2008: 3.3	AC 20-115B, RTCA DO-178B
15.1.3	JSSG-2008: 3.1.16	AC 20-115B, RTCA DO-178B
15.1.4	JSSG-2008: 3.3.7	AC 20-115B, RTCA DO-178B
15.1.5	JSSG-2008: 3.3.1	AC 20-115B, RTCA DO-178B
15.1.6	JSSG-2008: 3.2.2.2.2, 3.2.2.2.5, 3.3	AC 20-115B, RTCA DO-178B
15.1.7	JSSG-2008: 3.3.1	AC 20-115B, RTCA DO-178B
15.1.8	JSSG-2008: 3.1.7.1	AC 20-115B, RTCA DO-178B
15.1.9	JSSG-2008: 3.3.7	AC 20-115B, RTCA DO-178B
15.2 Functional design integration of processing elements.		
15.2.1	JSSG-2008: 3.3.6	AC 20-115B, RTCA DO-178B
15.2.2	JSSG-2008: 3.3.1	AC 20-115B, RTCA DO-178B
15.2.3	JSSG-2008: 3.3.1	AC 20-115B, RTCA DO-178B

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
15.3 Subsystem/processing element.		
15.3.1 Electronics		
15.3.1.1	JSSG-2008: 3.3.1	AC 20-115B, RTCA DO-178B
15.3.1.2	JSSG-2008: 3.3.1	AC 20-115B, RTCA DO-178B
15.3.2 Architecture mechanization.		
15.3.2.1	JSSG-2001: 3.3.3.1 JSSG-2008: 3.3.4	AC 20-115B, RTCA DO-178B
15.3.2.2	JSSG-2001: 3.3.3.1 JSSG-2008: 3.3	AC 20-115B, RTCA DO-178B
15.3.2.3	JSSG-2008: 3.3.1	AC 20-115B, RTCA DO-178B
15.3.2.4	JSSG-2008: 3.3.6	AC 20-115B, RTCA DO-178B
15.3.2.5	JSSG-2008: 3.3	AC 20-115B, RTCA DO-178B
15.3.2.6	JSSG-2008: 3.1.16	AC 20-115B, RTCA DO-178B
15.3.2.7	JSSG-2008: 3.3.6	AC 20-115B, RTCA DO-178B
15.3.2.8	JSSG-2008: 3.3.5	AC 20-115B, RTCA DO-178B
15.3.2.9	JSSG-2008: 3.3.6	AC 20-115B, RTCA DO-178B

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
15.3.3 Processing architecture verification for SOF items.		
15.3.3.1	JSSG-2008: 3.3.6.2	AC 20-115B, RTCA DO-178B
15.3.3.2	JSSG-2008: 3.3.7	AC 20-115B, RTCA DO-178B
15.3.3.3	JSSG-2008: 3.1.16	AC 20-115B, RTCA DO-178B
15.3.3.4	JSSG-2008: 3.3.7	AC 20-115B, RTCA DO-178B

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**A.16. Maintenance**

<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
16. Maintenance		
16.1 Maintenance manuals/ checklists.		
16.1.1	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529, 25.1501, 25.1503-25.1533, 25.1529, 25.1541, 25.1543, 25.1557, 25.1563,
16.1.2	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529, 25.1501, 25.1503-25.1533, 25.1529, 25.1541, 25.1543, 25.1557, 25.1563,
16.1.3	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529, 25.1501, 25.1503-25.1533, 25.1529, 25.1541, 25.1543, 25.1557, 25.1563,
16.1.4	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529, 25.1501, 25.1503-25.1533, 25.1529, 25.1541, 25.1543, 25.1557, 25.1563,
16.2 Inspection requirements.		
16.2.1	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529
16.2.2.a	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529
16.2.2.b	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529
16.2.2.c	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529
16.2.2.d	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
16.2.2.e	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529
16.2.2.f	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529
16.2.2.g	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529
16.2.2.h	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529
16.2.2.i	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529
16.2.2.j	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529
16.2.2.k	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529
16.2.2.1	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529
16.2.2.2	JSSG-2000: 3.6.1, 3.6.2, JSSG-2001: 3.1.5, 3.4.4.2.1.4.3, 3.4.4.2.1.5	23.1501, 23.1529



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### A.17. Armament/Store Integration

CERTIFICATION CRITERIA	SUPPORT DOCUMENTATION	FEDERAL AVIATION REGULATIONS
17. Armament/Stores Integration		
17.1 Gun integration and interface.		
17.1.1	MIL-HDBK-1763: Appendix A, page 109	No applicable reference available.
17.1.2	MIL-HDBK-1763: Appendix A, page 109	No applicable reference available.
17.1.3	MIL-HDBK-1763: Appendix A, page 109	No applicable reference available.
17.1.4	MIL-HDBK-1763: Appendix A, page 109	No applicable reference available.
17.2 Stores integration.		
17.2.1	MIL-HDBK-1763: Appendix A, page 54	No applicable reference available.
17.2.2	MIL-HDBK-1763: Appendix A, pages 59, 70, 82	No applicable reference available.
17.2.3	MIL-HDBK-1763: Appendix A, pages 59, 62, 64, 65, 70, 71, 75, 78	No applicable reference available.
17.2.4	MIL-HDBK-1760	No applicable reference available.
17.2.5	MIL-HDBK-1763: Appendix A, pages 62, 70, 71, 75, 89, 90, 93, 96, 99, 103	No applicable reference available.
17.2.6	JSSG-2001: 3.3.10.1.1, 3.4.2.1.5, 3.4.2.2	No applicable reference available.
17.2.7	MIL-HDBK-1763	No applicable reference available.
17.2.8	MIL-STD-27733, MIL-HDBK-244	No applicable reference available.

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
17.3 Laser integration and interface.		
17.3.1	ANSI Z136.1, MIL-STD-1425A, 21 CFR Part 1040, AFOSH std 48-139, RCC 316-91	No applicable reference available.
17.3.2	ANSI Z136.1, MIL-STD-1425A, 21 CFR Part 1040, AFOSH std 48-139, RCC 316-91	No applicable reference available.
17.3.3	ANSI Z136.1, MIL-STD-1425A, 21 CFR Part 1040, AFOSH std 48-139, RCC 316-91	No applicable reference available.
17.3.4	ANSI Z136.1, MIL-STD-1425A, 21 CFR Part 1040, AFOSH std 48-139, RCC 316-91	No applicable reference available.
17.3.5	ANSI Z136.1, MIL-STD-1425A, 21 CFR Part 1040, AFOSH std 48-139, RCC 316-91	No applicable reference available.

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**A.18. Passenger Safety**

<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
18. Passenger Safety		
18.1 Survivability of passengers		
18.1.1	JSSG-2010-7: 3.7.3.2.2	25.785, 23.2, 23.562, 23.785
18.1.2	JSSG-2010-7: 3.7.3.2.2	25.785, 23.2, 23.562, 23.785
18.1.3	No information available in current JSSG. Information to be included in next revision of JSSG.	25.561, 25.787, 25.789, 23.787
18.1.4	JSSG-2010-7: 3.7.3.7.3	25.787, 25.789, 23.787, 25.801, 25.1411, 25.561
18.1.5	JSSG 2010-7: 3.7.5.3.1	25.783
18.1.6	JSSG 2010-7: 3.7.5.3.1	25.813, 25.809, 23.807, 25.813
18.1.7	JSSG 2010-7: 3.7.5.3.2, JSSG 2010-13: 3.13.5 page 67, 68	25.810, 121.31a
18.1.8	JSSG 2010-13: 3.13.5 page 66	25.811
18.1.9	JSSG 2010-3: 3.3.4 JSSG 2010-7: 3.7.3.5.3 JSSG 2010-11: 3.11.7, 3.11.7.2, 7.3.3.3.5.3	No applicable reference available.
18.1.10	JSSG 2010-13: 3.13.5 page 62, 65	25.812, 23.812, 25.1351, 25.1353, 25.1355, 25.1357, 25.1363
18.1.11	JSSG 2010-13: 3.13.5 page 55	25.813, 23.813, 25 Appendix F, 25 Appendix J
18.1.12	JSSG 2010-13: 3.13.5 page 68	25.812, 23.812, 25.811
18.1.13	No information available in current JSSG. Information to be included in next revision of JSSG.	25.1423

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
18.1.14	No information available in current JSSG. Information to be included in next revision of JSSG.	25.1423
18.1.15	No information available in current JSSG. Information to be included in next revision of JSSG.	25.1423
18.1.16	JSSG 2010-7: 3.7.3.2.3	25.789, 25.1421
18.1.17	JSSG-2010-4	121.319
18.1.18	JSSG 2010-11: 3.11.7.3	25.1561, 23.1561, 23.1415
18.1.19	JSSG 2010-11: 3.11.7.3	25.1561, 23.1561, 23.1415
18.1.20	JSSG 2010-9: 3.11.7.3	25.1561, 23.1561, 23.1415, 121.339
18.1.21	No information available in current JSSG. Information to be included in next revision of JSSG.	25.1561, 23.1561, 23.1415, TSO C70a
18.1.22	JSSG 2010-13: 3.13.5 page 71	25.1411, 25.1415
18.1.23	JSSG 2010-13: 3.13.5 page 62, 65	25.812, 23.812, 25.1351, 25.1353, 25.1355, 25.1357, 25.1363
18.2 Fire detection, suppression, and resistance		
18.2.1	JSSG 2010-11	121.309, 121.310
18.2.2	2010-9: 3.9.3	25.851
18.2.3	No information available in current JSSG. Information to be included in next revision of JSSG.	25.787, 25.789, 23.787
18.2.4	JSSG 2010-7: 3.7.3.4	25.791, 23.853, 25.854, 25 Appendix F
18.2.5	JSSG 2010-7: 3.7.3.4	25.855, 25.857, 25.858, 25.859
18.2.6	JSSG 2010-7: 3.7.3.4, 3.10, 4.10	25.869
18.2.7	JSSG 2009 Appendix G: 3.4.7.9	25.854, 25.857

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<b>CERTIFICATION CRITERIA</b>	<b>SUPPORT DOCUMENTATION</b>	<b>FEDERAL AVIATION REGULATIONS</b>
18.3 Physiology requirements of passengers		
18.3.1	JSSG 2009 Appendix D: 65	25.831, 25.832
18.3.2	JSSG 2010-10: 3.10.1, 4.10.1	25.1439, 23.1441, 23.1443, 23.1445, 25.1447, 23.1449, 23.1450, 25.1441, 25.1443, 25.1445, 25.1449, 25.1450, 25.1453
18.3.3	No information available in current JSSG. Information to be included in next revision of JSSG.	121.309, 121.339, 121.310

## APPENDIX

## A.19. Other

CERTIFICATION CRITERIA	SUPPORT DOCUMENTATION	FEDERAL AVIATION REGULATIONS
19. Other Considerations		
19.1 Mission/test equipment and cargo/payload safety.		
19.1. 1.a	Use JSSGs corresponding to the appropriate item and/or installations under consideration.	Use FAR sections corresponding to Structural and Installation requirements. Use all systems FARs as applicable, i.e., Electrical.
19.1. 1.b	Use JSSGs corresponding to the appropriate item and/or installations under consideration.	Use FAR sections corresponding to Structural and Installation requirements. Use all systems FARs as applicable, i.e., Electrical.
19.1. 1.c	Use JSSGs corresponding to the appropriate item and/or installations under consideration.	Use FAR sections corresponding to Structural and Installation requirements. Use all systems FARs as applicable, i.e., Electrical.
19.1.2	Use JSSGs corresponding to the appropriate item and/or installations under consideration.	Use FAR sections corresponding to Structural and Installation requirements. Use all systems FARs as applicable, i.e., Electrical.
19.1.3	Refer to technical point of contact for this discipline (listed in section A.20).	No applicable reference available.

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**APPENDIX**

**A.20. TECHNICAL POINTS OF CONTACT**

<b>POINT OF CONTACT INFORMATION</b>				
<b>Technical Discipline</b>	<b>Office</b>	<b>POC</b>	<b>DSN</b>	<b>Commercial</b>
<b>Systems Engineering</b>	ASC/ENS	Tech Director	785-1799	(937) 255-1799
	NAVAIR 4.0P	Deputy Airworthiness Officer	342-0301	(301) 342-0301
<b>Structures</b>	ASC/ENFS	Tech Advisor	785-5485 785-5503	(937) 255-5485 (937) 255-5503
	NAVAIR 4.3.3	Division Head	342-9381	(301) 342-9381
	AMSAM-RD-AE-F	Division Chief	897-2350 X9688	(256) 705-9688
<b>Flight Technology</b>	ASC/ENFT	Tech Advisor	785-8551 785-5503	(937) 255-8551 (937) 255-5503
	NAVAIR 4.3.2	Division Head	342-8550	(301) 342-8550
<b>Propulsion</b>	ASC/ENFP	Branch Chief	785-9595 785-8059	(937) 255-8553 (937) 255-8059
	NAVAIR 4.4.1	Division Head	757-0499	(301) 757-0499
<b>Air Vehicle Subsystems</b>	ASC/ENFA	Tech Advisor	785-9552 785-8059	(937) 255-9552 (937) 255-8059
	NAVAIR 4.3.5	Division Head	342-8505	(301) 342-8505
<b>Hydraulics and Pneumatic Systems</b>	ASC/ENFA	Tech Specialist	785-8509 785-8059	(937) 255-8509 (937) 255-8059
	NAVAIR 4.3.5.2	Division Head	757-2001	(301) 757-2001
<b>Environmental Management System</b>	ASC/ENFA	Tech Specialist	785-8514 785-8059	(937) 255-8514 (937) 255-8059
	NAVAIR 4.3.5.1	Division Head	757-2345	(301) 757-2345

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<b>POINT OF CONTACT INFORMATION</b>				
<b>Technical Discipline</b>	<b>Office</b>	<b>POC</b>	<b>DSN</b>	<b>Commercial</b>
<b>Fuel System</b>	ASC/ENFA	Tech Expert	785-5908	(937) 255-5908
			785-8059	(937) 255-8059
	NAVAIR 4.3.5.3	Division Head	323-7127	(732) 323-7127
<b>Fire and Hazard Protection</b>	ASC/ENFA	Tech Expert	785-5908	(937) 255-5908
			785-8059	(937) 255-8059
	NAVAIR 4.3.5.1	Division Head	757-2345	(301) 757-2345
<b>Landing Gear &amp; Deceleration Systems</b>	ASC/ENFA	Tech Specialist	785-8511	(937) 255-8511
			785-8059	(937) 255-8059
	NAVAIR 4.3.5.2	Division Head	757-2001	(301) 757-2001
<b>Auxiliary/Emergency Power Systems</b>	ASC/ENFA	Tech Specialist	785-8506	(937) 255-8506
			785-8059	(937) 255-8059
	NAVAIR 4.4.6	Division Head	342-0806	(301) 342-0806
<b>Aerial Refueling System</b>	ASC/ENFA	Tech Specialist	785-7267	(937) 255-7267
			785-8059	(937) 255-8059
	NAVAIR 4.3.5	Division Head	342-9371	(301) 342-9371
<b>Propulsion Installations</b>	ASC/ENFA	Tech Specialist	785-8506	(937) 255-8506
			785-8059	(937) 255-8059
	NAVAIR 4.4.1	Division Head	757-0499	(301) 757-0499
<b>Crew Systems</b>	ASC/ENFC	Tech Advisor	785-8608	(937) 255-8608
			785-8059	(937) 255-8059
	NAVAIR 4.6	Division Head	342-8429	(301) 342-8429
<b>Diagnostics Systems</b>	ASC/ENS	Tech Director	785-1799	(937) 255-1799
<b>Avionics</b>	ASC/ENA	Tech Director	785-9299	(937) 255-9299
	NAVAIR 4.5.1.1	Division Head	342-9130	(301) 342-9130



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<b>POINT OF CONTACT INFORMATION</b>				
<b>Technical Discipline</b>	<b>Office</b>	<b>POC</b>	<b>DSN</b>	<b>Commercial</b>
<b>Electrical Power</b>	ASC/ENAE	Tech Expert	785-5078	(937) 255-5078
	NAVAIR 4.4.4	Division Head	342-0803	(301) 342-0803
<b>Electromagnetic Environmental Effects</b>	ASC/ENAE	Tech Expert	785-5078	(937) 255-5078
	NAVAIR 4.1.7	Division Head	342-7967	(301) 342-7967
<b>System Safety</b>	ASC/ENSA	Tech Advisor	785-3838	(937) 255-3838
	NAVAIR	Division Head	342-2137	(301) 342-2137
<b>Computer Resources</b>	ASC/ENFT	Tech Expert	785-8552 785-5503	(937) 255-8552 (937) 255-5503
	ASC/ENAC	Branch Chief	785-3999	(937) 255-3999
	NAVAIR 4.1.11	Division Head	342-2102	(301) 342-2102
<b>Maintenance</b>	ASC/ENSS	Tech Expert	785-9541	(937) 255-9541
<b>Armament/Stores Integration</b>	ASC/ENSI	Tech Specialist	785-5882	(937) 255-5882
	NAVAIR 4.7.6	Division Head	437-7206	(760) 939-7206
	NAVAIR 4.11.2	Division Head	342-4390	(301) 342-4390
<b>Passenger Safety</b>	ASC/ENFC	Tech Advisor	785-8608 785-8059	(937) 255-8608 (937) 255-8059
	NAVAIR 4.6	Division Head	342-8429	(301) 342-8429
<b>Other Considerations</b>	ASC/EN	Technical Advisor, Systems Engineering	785-4002	(937) 255-4002

Custodians:

Navy – AS

Air Force – 11

Army – AV

Preparing Activity:

Air Force – 11

(Project: SESS-0057)

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